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ABSTRACT

The impact on the age 70 mandatory retirement law on future employment opportunities and payroll costs of faculties of member institutions of the Consortium on Financing Higher Education (COFHE) was evaluated. Current and 5-year historical information on tenure-tract arts and science faculty of 27 of the COFHE institutions were analyzed. This includes data on over 8,400 active faculty as of January 1, 1979 and an additional 2,600 who have retired, died, or otherwise terminated during the last 5 years. Twenty-year faculty projections were also developed. Findings include the following: during the 1974-1978 period, the average ages for mandatory and nonmandatory retirements have remained relatively constant from year to year, at 67 and 63.6, respectively; and mandatory retirements account for about two-thirds of all retirements, and of these, the largest numbers occur at ages 65, 68, and 70, with just over half of the mandatory total occurring at age 65. It is projected that an extension of mandatory retirement to age 70 could result in as much as 57 percent of the faculty population teaching for another 1 to 5 years, with an overall average of about 3 additional years. The effect on opportunities for junior faculty openings and the availability of tenured faculty positions is noted. (SW)

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Potential Financial and Employment Impact of Age 70 Mandatory Retirement Legislation on COFHE Institutions

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for
Consortium on Financing Higher Education

DECEMBER 1979

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December 28, 1979

President Colin G. Campbell
Wesleyan University
Middletown, Connecticut 06457

Dear President Campbell:

At the request of the Consortium on Financing Higher Education, we have performed a detailed analysis of the arts and sciences faculties of the COFHE institutions to provide a quantitative assessment of the potential impact of the age 70 mandatory retirement law on future employment opportunities and payroll costs. The results of this analysis are presented in this report.

Very truly yours,

TILLINGHAST, NELSON & WARREN, INC.

J. Russell Southworth

J. Russell Southworth, F.S.A.
Principal

Ronald A. Jagmin

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Consulting Actuary

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SYNOPSIS

In April of 1978, President Carter signed a bill into law that amends the Age Discrimination in Employment Act (ADEA) to establish age 70 as the earliest permissible mandatory retirement age. While the law became generally effective January 1, 1979, the effective date applicable to tenured faculty is July 1, 1982.

The Consortium on Financing Higher Education (COFHE) has received a grant from the Andrew W. Mellon Foundation to explore and evaluate the implications of this new law on higher education and to provide useful guidance for its own member institutions, as well as for other colleges and universities.

COFHE has engaged Tillinghast, Nelson & Warren to conduct the first phase of this study. This phase includes an analysis of the arts and sciences faculties of the COFHE institutions to provide a quantitative assessment of the potential impact of age 70 mandatory retirement, and covers these areas of particular concern:

- Hiring of young faculty
- Availability of tenured faculty positions
- Payroll costs

We have collected and studied extensive current and five-year historical information on all tenure-track arts and science faculty of twenty-seven of the thirty COFHE institutions. This includes data on over 8400 active faculty members as of January 1, 1979 and an additional 2600 who have retired, died, become disabled, or otherwise terminated during the last five years.

Analysis of this data enabled us to determine the important characteristics of the active faculty population, changes that have taken place, and trends that are likely to continue. We also examined the experience of the past several years with respect to mandatory and non-mandatory retirements, deaths, disabilities and other terminations, new appointments of tenure track faculty, and awards of tenured faculty positions. We used the results of this analysis to determine what effect the age 70 mandatory retirement law might have had on faculty hiring, tenure awards, and payroll costs, if the law had been enacted in 1974. Finally, applying the 1974-78 experience to the current faculty population, we developed twenty-year faculty projections that illustrate the immediate impact and longer-term effects of the age 70 retirement law.

Incidence of Retirement

During the 1974-78 period, the average ages for mandatory and non-mandatory retirements have remained relatively constant from year to year, at 67 and 63-1/2, respectively. The number of retirements each year currently amounts to 1-1/2% or less of the total active tenured faculty, reflecting the fact that the age composition of the faculty population has not yet matured. Mandatory retirements account for approximately two-thirds of all retirements, and of these, the largest numbers occur at ages 65, 68 and 70, with just over half of the mandatory total occurring at age 65. Based upon this experience, we determined that of any group of faculty attaining age 55, 10% would die or become disabled prior to retirement, 23% would voluntarily retire, and the remaining 67% would be mandatorily retired. Under current retirement policies, only 10% of faculty retire as late as age 70. Therefore, an extension of mandatory retirement to age 70 could result in as much as 57% of the faculty population teaching for another one to five years, with an overall average of about three additional years.

Sources of Junior Faculty Openings

Over the 1974-78 period, the number of tenure awards substantially exceeded the number of tenured faculty retirements, deaths, disabilities and terminations. Replacement of departing faculty accounted for only 43% of tenure openings over the period. An additional 20% was attributable to growth in overall faculty size (total faculty grew by 4.3% over the period), and an increase in the tenure ratio (i.e. - the ratio of tenured to total faculty) accounted for the remaining 37%. The level of tenure awards has dropped from an average of about 240 during the 1970-75 period to about 200 annually over the last three years. Of all tenured faculty positions awarded over the last four years, approximately 25% went to faculty hired with tenure. This was somewhat surprising in light of the reduced number of available tenure openings over the past few years. We found, however, that the number and average age of tenured faculty terminations (other than for reasons of retirement, death, or disability) closely paralleled those hired with tenure, with the net effect being that they largely cancel each other out.

The level of new hires has also dropped in recent years, from a rate of 620 to 650 for the 1973-75 period to roughly 500 annually for the last three years. Turnover of non-tenured faculty has been roughly 20% annually throughout the 1974-78 period. The "tenure expectation" of young faculty (i.e. -- the ratio of tenure awards to total non-tenured faculty reductions in a given year) has remained fairly constant over the past three years at about 36%.

Effect of Extending Mandatory Retirement

Mandatory retirements are an important source of available openings for new hires and tenure awards. Further, the payroll cost for tenured faculty near retirement age is much greater than that for junior faculty members. When the mandatory retirement law becomes effective, some

faculty members that would have left the institution as mandatory retirements will elect to remain until age 70. The result is additional active senior faculty members that occupy tenured teaching positions and receive salaries greater than the junior faculty members who would otherwise have replaced them. Since roughly half of mandatory retirements now occur at age 65, the worst of the impact will be felt in the first five years after enactment. After this five-year transitional period, we would expect the number retiring to increase sharply because those who would otherwise have retired at age 65 have now reached age 70.

1974-1978 Simulation of Age 70 Mandatory Retirement

On the basis of actual 1974-78 experience, we developed a simulation of what might have occurred if mandatory retirement were extended to age 70 just prior to the end of the 1974 academic year. In our model, we derived the maximum impact of the law by using a "worst case" assumption that anyone mandatorily retired would have elected to continue teaching to the end of the academic year following his or her 70th birthday. Overall, our assumptions tend to overstate the employment and financial impacts of mandatory retirement legislation, to the extent that some faculty members who were previously mandatorily retired would have either died or elected to retire prior to reaching age 70.

In spite of this, we found that under our "worst case" assumptions, if the COFHE institutions chose not to allow the change in mandatory retirement law to affect either tenure awards or new hires, payroll costs would have increased only about 1% in the first year, gradually increasing to slightly less than 3% by the end of the fifth year. If the institutions had decided to offset this potential increase in payroll cost by reducing employment opportunities, the result would have been a 13% reduction in new hires over the five year period. This level of cutbacks in junior faculty openings would occur only if they were mandated by a policy of absolutely no increases in payroll costs to the institution. If, on the other hand, the institutions had allowed their payroll costs to increase by as little as 1-1/4% over the five year period, the reduction in new hiring could have been limited to about 7%.

As mentioned previously, however, retirements and other terminations of tenured faculty accounted for only 43% of the total number of tenure awards during the 1974-78 period. The rest was achieved through overall faculty growth and increasing tenure ratios, causing payroll costs to rise (or faculty salaries to fall) by an estimated 1% per year. Therefore, in light of the prospect of tighter budgets and increasing numbers of faculty approaching retirement, we could anticipate that the mandatory retirement law will have a greater "worst case" impact in the future than the 1974-78 calculations would suggest. This is borne out in our projections.

Projected Impact of Age 70 Mandatory Retirement

Because of the changing nature of the faculty population it was necessary to project retirements into the future in order to assess adequately the potential impact of the new law. We based our projections on a continuation of the experience of the last five years, recognizing that the faculty composition has changed over this period and will continue to change in the future. The number of faculty in the over-age-60 category will show a steady increase in the future and is expected to double in the next 20 years. This steady rise in the number of older faculty approaching retirement is a mixed blessing -- it will create additional openings for junior faculty but will also magnify the potential effects of the retirement law.

Our projections indicate that the change in the mandatory retirement law would increase payroll costs by 3-1/2% by the end of the fifth year after its enactment, and they would continue to increase gradually to about 6-1/2% after 20 years when the faculty composition has presumably matured.

These cost increases would occur if the institutions decide to bear the increased payroll cost for faculty members who elect to continue to age 70, without allowing either new hires or tenure awards to be affected. We found that, if COFHE institutions are forced to maintain no growth payroll budgets as a result of declining enrollments in the future, while at the same time having to adjust to the mandatory retirement legislation, the combined effect results in hiring being reduced by one third from current levels for a period of roughly 10 years. It is important to note that only half of this reduction in faculty openings is attributable to age 70 mandatory retirement -- the other half would occur anyway under no-growth budgets.

Within 20 years, faculty openings would again be approaching current levels because of the steady increase in retirements. This indicates that abrupt reductions in faculty openings might be avoided by deferring any significant budget cutting until the five-year period of adjustment to the mandatory retirement law is completed. At that point, faculty will be retiring in increasing numbers, allowing a cutback in payroll costs with a more modest effect on employment opportunities.

It should be noted that the one-third reduction in faculty openings assumes that the entire burden of constant budgets and age 70 mandatory retirement would fall on young PhD's seeking employment. It is more likely that some of the impact will be absorbed by present faculty in the form of smaller pay increases. For example, if present faculty size is maintained in the face of constant payroll budgets, our projections show that faculty openings are reduced by 15% to 20% at their lowest point -- if combined with a gradual reduction in faculty salaries of 4% to 5% in terms of today's dollars.

It must be kept in mind that this study is based on the combined data of 27 participating COFHE institutions, and the results for any one institution will depend upon many factors -- including current retirement policy, age composition of the current faculty, and incidence of non-mandatory retirement. Therefore, maximum added costs after five years could range from as much as 15% of payroll for a school with a mature population that previously had strictly adhered to an age 65 mandatory retirement policy, down to no additional cost at all for a school which already administers a mandatory retirement policy of age 70 or later.

Finally, it is worth repeating that all of our calculations are on the basis of "worst case" assumptions with no allowance for early retirement incentive programs. Therefore, we do believe our projections provide a true outside limit of the overall effect of age 70 mandatory retirement.

I - EXAMINATION OF 1974 - 1978 EXPERIENCE

The initial step of the analysis involved the collection of extensive information from each COFHE member institution on all active tenure-track arts and science faculty as of January 1, 1979, plus all who retired, died, became disabled, or otherwise terminated since the beginning of the 1973-74 academic year. Twenty-nine of the thirty member institutions submitted data in response to the questionnaire. This data collection process required a great deal of time and effort on the part of each institution and the COFHE staff. Numerous checks and follow-ups were conducted to assure accuracy, consistency and completeness of the data, and as a result the data of twenty-seven of the twenty-nine was considered usable for purposes of the study. The Appendix contains a detailed discussion of this data collection and screening process.

Data Compilation

The period covered by our analysis consists of the five calendar years from 1974 through 1978. It was our initial intent to compile results by academic year; however, we found the use of calendar years more appropriate for several reasons. First, it would be difficult to pick a date which accurately reflects the beginning or end of the academic year, because the academic year varies from institution to institution. Further problems arose because some schools reported retirements and terminations at the end of the academic year, while others reported them as of the beginning of the following year. We found that we could eliminate this distortion by taking "snapshots" on a calendar year basis, thereby enabling a reliable year-by-year comparison.

TABLE 1

CONSORTIUM ON FINANCING HIGHER EDUCATION — GRAND TOTAL

DISTRIBUTION OF ACTIVE FACULTY AND AVERAGE 9-MONTH SALARY RATE BY AGE/SERVICE AS OF JANUARY 1, 1979

ATTN. AGE	UNDER 1 #	UNDER 1 AVG $	1 #	1 AVG $	2 #	2 AVG $	3 #	3 AVG $	4 #	4 AVG $	5-9 #	5-9 AVG $
<30	201	15435	149	15621	89	16092	48	17233	21	17599	7	22728
30-34	202	16337	210	16360	237	17171	233	17403	254	17902	422	19175
35-39	81	20894	88	19124	98	19663	106	18893	122	19325	705	20794
40-44	22	28918	41	24077	24	23029	29	23839	41	22324	293	23432
45-49	9	27666	14	32100	18	30005	23	29817	13	31838	166	28563
50-54	13	34076	11	37679	13	33400	8	33521	21	30585	105	31093
55-59	6	33333	8	34912	4	41850	12	32216	9	34922	76	32766
60-64	3	33833	5	43680	5	40370	6	32916	3	33991	34	36093
65-69	0	0	0	0	1	34080	1	27800	0	0	10	30479
70-74	0	0	0	0	0	0	0	0	0	0	2	27150
75+	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	537	18109	526	18621	489	19139	466	19618	484	19963	1820	22999

ATTN. AGE	10-14 #	10-14 AVG $	15-19 #	15-19 AVG $	20-24 #	20-24 AVG $	25-29 #	25-29 AVG $	30+ #	30+ AVG $	TOTAL #	TOTAL AVG $
<30	0	0	0	0	0	0	0	0	0	0	515	15958
30-34	4	21750	0	0	0	0	0	0	0	0	1562	17661
35-39	322	23696	7	28981	0	0	0	0	0	0	1529	21030
40-44	530	25614	194	27333	2	24462	0	0	0	0	1176	25149
45-49	377	27157	359	28513	126	30533	0	0	0	0	1105	28417
50-54	208	29934	257	29965	246	30654	77	33227	6	28795	965	30742
55-59	130	31770	152	31709	170	30533	178	31022	71	31568	816	31546
60-64	54	33649	71	33179	76	29980	105	31044	203	32113	565	32351
65-69	20	33182	31	34988	15	28713	22	32231	100	31435	200	31991
70-74	1	13200	3	19366	3	17700	1	27000	15	25720	25	23660
75+	0	0	0	0	0	0	0	0	2	31600	2	31600
TOTAL	1646	26963	1074	29573	638	30391	383	31530	397	31551	8460	24784

To a large extent, retirements and terminations which occur at the end of an academic year create available positions which are not filled until the start of the next academic year. Using calendar year periods enables us to group virtually all of these new appointments and tenure awards in the same study period with the departures that made the positions available. Finally, the size and composition of the faculty population during the academic year is of more interest than the population remaining after faculty departures at the close of the academic year, and "snapshots" as of January first provide a profile of the faculty at roughly the midpoint of the academic year.

Current Faculty Composition

Table 1 shows the age, service, and salary composition of active faculty as of January 1, 1979. As expected, there is a steady increase in average salary for each succeeding age group through age 65. The table shows that the salary of a faculty member approaching retirement is approximately double that of the average salary of the newly hired assistant professor. This salary progression, which was remarkably consistent from institution to institution, was an important factor in our cost projections.

Table 2 shows the total faculty composition as of 1974 and 1979. While not having any direct bearing on our study, we have included a breakdown between males and females for purposes of general interest. The breakdown between tenured and non-tenured faculty proved to be of greater significance. It is apparent that the population has aged. During the 5 year period, the average age of the tenured population rose by more than a full year, while the average age of non-tenured faculty rose by about a half year. Of particular importance is the substantial increase in the number of tenured faculty approaching retirement age -- from 598 over age 60 in 1974 to 781 in 1979, for an overall increase of 31%.

TABLE 2

CHANGES IN COMPOSITION OF TOTAL FACULTY (1974 to 1979)

As of January 1, 1974

	Tenured			Non-Tenured			Total		
Age	Male	Female	Total	Male	Female	Total	Male	Female	Total
Under 30	11	--	11	587	188	775	598	188	786
30 - 34	294	18	312	1209	244	1453	1503	262	1765
35 - 39	801	45	846	426	90	516	1227	135	1362
40 - 44	955	52	1007	104	44	148	1059	96	1155
45 - 49	859	62	921	27	26	53	886	88	974
50 - 54	728	75	803	16	18	34	744	93	837
55 - 59	558	44	602	8	6	14	566	50	616
60 - 64	377	48	425	7	3	10	384	51	435
65 - 69	151	13	164	1	4	5	152	17	169
70 - 74	9	0	9	1	0	1	10	0	10
75 +	0	0	0	0	0	0	0	0	0
Total	4743	357	5100	2386	623	3009	7129	980	8109
Average Age			47.8			33.2			42.4

As of January 1, 1979

	Tenured			Non-Tenured			Total		
Age	Male	Female	Total	Male	Female	Total	Male	Female	Total
Under 30	7	0	7	375	133	508	382	133	515
30 - 34	169	28	197	1015	350	1365	1184	378	1562
35 - 39	798	92	890	442	197	639	1240	289	1529
40 - 44	974	70	1044	81	51	132	1055	121	1176
45 - 49	981	79	1060	20	25	45	1001	104	1105
50 - 54	864	83	947	7	11	18	871	94	965
55 - 59	720	86	806	5	5	10	725	91	816
60 - 64	512	45	557	8	0	8	520	45	565
65 - 69	178	19	197	2	1	3	180	20	200
70 - 74	23	2	25	0	0	0	23	2	25
75 +	2	0	2	0	0	0	2	0	2
Total	5228	504	5732	1955	773	2728	7183	1277	8460
Average Age			48.9			33.7			44.0

Table 3 highlights the consistent year-to-year pattern of increases in total faculty size, average age and tenure ratio.

TABLE 3

YEAR-TO-YEAR CHANGE IN FACULTY COMPOSITION

As of Jan. 1	Tenured			Non-Tenured			Total			% Increase in Total Faculty
	No.	Age	%	No.	Age	%	No.	Age	%	
1974	5100	47.8	62.9%	3009	33.2	37.1%	8109	42.4	100.0%	--
1975	5258	47.8	63.6	3011	33.2	36.4	8269	42.4	100 0	2.0%
1976	5383	48.0	64.7	2938	33.3	35.3	8321	42.8	100.0	.6
1977	5491	48.3	65.8	2857	33.4	34.2	8348	43.2	100.0	.3
1978	5622	48.6	66.8	2788	33.5	33.2	8410	43.6	100.0	.7
1979	5732	48.9	67.8	2728	33.7	32.2	8460	44.0	100.0	.6

The size of the combined group has grown 4.3%, from 8109 to 8460. After a 2% increase from 1974 to 1975, the total number of faculty has shown a modest but consistent increase over the last 4 years, averaging slightly under 0.6% per year.

While the overall figure increased only 4.3%, the number of tenured faculty grew from 5100 to 5732, for an increase of 12.4% during the same period. This results in a rise in the tenure ratio (i.e. the ratio of tenured to total faculty) from 62.9% in 1974 to 67.8% in 1979. We will show later in this report that both the upward drift in the tenure ratio and the relatively small increase in total faculty have important implications in our projections, particularly in relation to tenure awards and new appointments.

CONSORTIUM ON FINANCING HIGHER EDUCATION

TABLE 4

Non-Tenured Faculty

DISTRIBUTION OF ACTIVE FACULTY AND AVERAGE 9-MONTH SALARY RATE BY AGE/SERVICE AS OF JANUARY 1, 1979

ATTN. AGE	UNDER 1 #	UNDER 1 AVG $	1 #	1 AVG $	2 #	2 AVG $	3 #	3 AVG $	4 #	4 AVG $	5 #	5 AVG $
<30	200	15388	149	15621	89	16092	46	17087	20	16579	3	17833
30-34	197	16084	207	16201	228	16943	223	17139	237	17568	156	17698
35-39	55	17650	73	17148	75	17219	88	17633	93	18029	127	18368
40-44	11	21072	20	17093	15	18584	14	17082	21	18235	26	17790
45-49	3	17166	1	16100	7	21900	7	19424	2	18150	8	18487
50-54	3	24833	1	30500	3	20433	2	21936	6	23516	0	0
55-59	2	18500	0	0	0	0	4	22075	1	17100	0	0
60-64	2	30000	1	35400	0	0	2	26500	1	34600	0	0
65-69	0	0	0	0	0	0	1	27800	0	0	0	0
70-74	0	0	0	0	0	0	0	0	0	0	0	0
75+	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	473	16219	452	16276	417	16979	387	17436	381	17805	320	17992

ATTN. AGE	6 #	6 AVG $	7 #	7 AVG $	8 #	8 AVG $	9 #	9 AVG $	10+ #	10+ AVG $	TOTAL #	TOTAL AVG $
<30	1	15200	0	0	0	0	0	0	0	0	508	15794
30-34	71	18484	36	19670	7	18464	3	18833	0	0	1365	17097
35-39	61	18855	31	18692	22	19084	13	18786	1	17000	639	17975
40-44	14	19066	6	17468	2	23550	1	19200	2	14650	132	18215
45-49	5	20239	2	18094	2	16600	3	31303	5	20332	45	20160
50-54	0	0	1	16773	0	0	0	0	2	17550	18	22396
55-59	0	0	0	0	0	0	1	22900	2	23150	10	21160
60-64	0	0	0	0	0	0	0	0	2	39550	8	32762
65-69	0	0	0	0	1	33000	0	0	1	33500	3	31433
70-74	0	0	0	0	0	0	0	0	0	0	0	0
75+	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	152	18723	76	19017	34	19482	21	20797	15	22797	2728	17276

As one might expect, there are important differences between the non-tenured and tenured faculty populations. Tables 4 and 5 show the age, service, and salary compositions of each group separately. The heavy concentration of non-tenured faculty under six years' service reflects the general "up or out" nature of tenure-track positions at the COFHE institutions. It is apparent from Table 4 that very few non-tenured faculty reach retirement age while in such non-tenured status. Indeed, only ten retirements of non-tenured faculty were reported over the five-year study period. Because of their relative insignificance we have included these non-tenured retirements with other non-tenured terminations in all tables which follow.

As discussed later in the report, almost all retirements are among faculty who have attained age 60, with the great majority at ages 65 and over. Since relatively few are awarded tenure after age 45, most retirements of tenured faculty over the next 20 years will come from the current active tenured group (Table 5). Furthermore, since net terminations, deaths, and disabilities amount to only a small percentage of the tenured population each year, most of those currently active at ages 45 and over will eventually reach retirement age and leave this group as a result of retirement. The age distribution of the tenured faculty shows that COFHE schools can expect an increasing number of retirements over the next 20 years -- another factor that plays an important role in our projections.

If the experience of COFHE institutions has been similar to that of other colleges and universities, the large number of faculty in the 45 - 60 age range is partially attributable to a high level of new hires and tenure awards in the 1950's and particularly the 1960's.

TABLE 5

CONSORTIUM ON FINANCING HIGHER EDUCATION

Tenured Faculty

DISTRIBUTION OF ACTIVE FACULTY AND AVERAGE 9-MONTH SALARY RATE BY AGE/SERVICE AS OF JANUARY 1, 1979

ATTN. AGE	COMPLETED YEARS OF TENURE TRACK SERVICE: UNDER 5 #	UNDER 5 AVG $	5-9 #	5-9 AVG $	10-14 #	10-14 AVG $	15-19 #	15-19 AVG $	20-24 #	20-24 AVG $	25-29 #	25-29 AVG $
<30	4	26050	3	30133	0	0	0	0	0	0	0	0
30-34	44	23556	149	20971	4	21750	0	0	0	0	0	0
35-39	111	26308	451	22025	321	23717	7	28781	0	0	0	0
40-44	76	30371	244	24446	528	25655	194	27333	2	24462	0	0
45-49	57	34123	146	29651	373	27278	358	28486	126	30533	0	0
50-54	51	36292	104	31231	207	29994	257	29965	246	30654	77	33227
55-59	32	37662	75	32898	128	31905	152	31709	170	30533	178	31022
60-64	16	39889	34	36093	53	33670	71	33179	76	29980	104	30894
65-69	1	34080	9	30199	20	33182	31	34988	14	28371	22	32231
70-74	0	0	2	27150	1	13200	3	19366	3	17700	1	27000
75+	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	392	30721	1217	25235	1635	27018	1073	29565	637	30387	382	31491

ATTN. AGE	30-34 #	30-34 AVG $	35+ #	35+ AVG $	TOTAL #	TOTAL AVG $
<30	0	0	0	0	7	27800
30-34	0	0	0	0	197	21564
35-39	0	0	0	0	890	23224
40-44	0	0	0	0	1044	26025
45-49	0	0	0	0	1060	28768
50-54	5	31035	0	0	947	30901
55-59	68	31605	3	30733	806	31675
60-64	167	32174	36	31833	557	32345
65-69	56	30944	44	32060	197	32000
70-74	3	25233	12	25841	25	23660
75+	1	36200	1	27000	2	31600
TOTAL	300	31740	96	31103	5732	28357

Predictably, average salaries for tenured faculty are substantially higher than for non-tenured faculty, and salaries for both groups increase with age and service. An exception is the considerably higher average salary for tenured faculty in the under-five-year service category. This anomaly appears to result from including in this group senior faculty granted tenure upon joining the institution. For purposes of estimating costs later in the report, we developed the following average salary multiples from the distributions in Tables 4 and 5:

	Average Salary	Salary Multiple
New non-tenured appointments	$16,000	1.00
Total non-tenured group	17,300	1.08
New tenure awards	21,000	1.31
Total tenured group	28,350	1.77
Tenured members approaching retirement	32,000	2.00

We now turn our attention to the flow of faculty to and from the tenured and non-tenured populations.

TABLE 6

YEAR-TO-YEAR FLOW OF NON-TENURED FACULTY

Cal. Year	(1) Active As of Jan. 1 No.	(1) Active As of Jan. 1 Age	Reductions (2) Awarded Tenure No.	(2) Awarded Tenure Age	(2) Awarded Tenure %	Reductions (3) Terminations No.	(3) Terminations Age	(3) Terminations %	(4) Total Reductions (2) + (3) No.	(4) Total Reductions (2) + (3) Age	(4) Total Reductions (2) + (3) %	(5) New Hires No.	(5) New Hires Age	(5) New Hires %	(6) Estimate of Tenure Expectations (2) ÷ (4)
1974	3009	33.2	282	37.1	9.4%	344	34.4	11.4%	626	35.6	20.8%	628	30.6	20.9%	45.0%
1975	3011	33.2	228	36.6	7.6	396	34.2	13.2	624	35.1	20.7	551	30.9	18.3	36.5
1976	2938	33.3	190	36.9	6.5	370	35.0	12.6	560	35.6	19.1	479	30.8	16.3	33.9
1977	2857	33.4	207	37.2	7.2	362	34.8	12.7	569	35.7	19.9	500	31.0	17.5	36.4
1978	2788	33.5	199	37.3	7.1	352	34.7	12.6	551	35.6	19.8	491	31.3	17.6	36.1
1979	2728	33.7													

Note: Percentages relate to active non-tenured faculty as of January 1 each year.

Non-Tenured Population

Table 6 illustrates the year-to-year flow of non-tenured faculty over the study period. There was a consistent decrease in the number of non-tenured faculty, since the number of tenured faculty increased much faster than total group size.

We noted a substantial drop in tenure awards and new hires from 1974 to 1976 and a relative leveling off thereafter. This led us to question whether 1974 was an unusual year or the end of a period of substantially higher levels of tenuring and hiring.

Because very few tenured faculty members terminate, particularly within three to four years of achieving tenure, we were able to project fairly reliably the level of tenure awards back to the years 1970 through 1973, based on active faculty as of 1974. The 246, 229, 252, and 237 estimated tenure awards for 1970 through 1973, respectively, indicate that the 282 in 1974 was unusually high, but the average of approximately 200 from 1976 to 1978 is decidedly (some 16%) less than the 240 average during the 1970-75 period. This confirms that the annual rate of tenure awards has decreased significantly over the last few years.

We cannot as accurately project the new hires backward based on 1974 active data, because of the high turnover among non-tenured faculty, but there were at least 650 hired in 1973. It appears that hiring over the last three years has leveled off at roughly 500 per year, which is considerably less than the rate of the 620 to 650 per year for the 1973-1975 period. The average age at tenure award has remained fairly constant while the average age of young faculty being hired as well as the total non-tenured group has increased by about one half year.

Assuming that the ratio of tenure awards to total reductions in non-tenured faculty is a reasonable approximation of the expectation of

TABLE 7

YEAR-TO-YEAR FLOW OF TENURED FACULTY

Cal. Year	Active As of Jan. 1 No.	Active As of Jan. 1 Avg. Age	Tenure Awards: From Outside No.	From Outside Avg. Age	From Outside %	From Within No.	From Within Avg. Age	From Within %	Total No.	Total Avg. Age	Total %
1974	5100	47.8	59	41.5	1.2%	282	37.1	5.5%	341	37.8	6.7%
1975	5258	47.8	62	44.0	1.2	228	36.6	4.3	290	38.2	5.5
1976	5383	48.0	67	43.6	1.2	190	36.9	3.5	257	38.7	4.8
1977	5491	48.3	72	44.7	1.3	207	37.2	3.8	279	39.1	5.1
1978	5622	48.6	69	42.2	1.2	199	37.3	3.5	268	38.6	4.8
1979	5732	48.9									

Tenure Reductions

Year	Mandatory Retirement No.	Mandatory Retirement Avg. Age	Mandatory Retirement %	Non-Mandatory Retirement No.	Non-Mandatory Retirement Avg. Age	Non-Mandatory Retirement %	Death and Disability No.	Death and Disability Avg. Age	Death and Disability %	Other Terminations No.	Other Terminations Avg. Age	Other Terminations %	Total Reductions No.	Total Reductions Avg. Age	Total Reductions %
1974	80	67.0	1.6%	22	63.8	0.4%	15	53.8	0.3%	66	43.2	1.3%	183	56.9	3.6%
1975	56	67.5	1.1	21	63.8	0.4	15	56.4	0.3	73	45.8	1.4	165	56.4	3.1
1976	50	66.9	0.9	14	63.4	0.3	19	58.1	0.4	66	43.5	1.2	149	55.1	2.8
1977	47	67.2	0.9	19	63.4	0.3	20	61.4	0.4	62	44.0	1.1	148	56.2	2.7
1978	47	66.9	0.8	38	63.4	0.7	9	59.8	0.2	64	43.8	1.1	158	56.3	2.8

Note: Percentages relate to active tenured faculty as of January 1 each year.

eventual tenure for a young faculty member, we find that this too has leveled off over the past 4 years at about 36%. We also found that total non-tenured reductions as a percentage of non-tenured faculty remained very steady at about 20% per year.

Tenured Faculty

Table 7 summarizes the year-to-year flow of tenured faculty. The results shown in this table have important implications for our projections and ultimate conclusions. Looking first at tenure awards, we find that faculty hired with immediate tenure amounted to roughly 25% of total tenure awards for the past four years. Projecting backward to 1970 indicated that the same percentage of total tenure awards came from outside the institution over the period 1970-1973. (1974 appears to be an unusual year.)

This substantial number of awards from outside is surprising in light of the reduced number of available tenure openings over the past few years. Discussions with faculty and administrators at several institutions lead us to conclude that these outside tenure appointments are of such necessity that they are largely independent of the supply and demand situation within the institution. Frequently, a senior faculty member was needed to replace a similar departing faculty member and a suitable candidate was not available from within the institution.

We also noted that the number and average age of terminations with tenure (other than for reasons of retirement, death, or disability) closely paralleled the tenure appointments from outside. Overall, during the five-year period, there were only two more tenured terminations than there were new hires with tenure. Therefore, tenure awards from outside and other terminations virtually cancelled each other out -- enabling us to eliminate both categories for projection purposes. We

could then assume that net flow into the tenured population comes from tenure awards from within the institutions, (i.e., from the non-tenured population), and that net flow out of the tenured population arises from retirements, deaths, and disabilities.

It is clear from Table 7 that the number of tenure awards substantially exceeds the number of tenured faculty retirements, deaths, disabilities, and net terminations. Since the growth in overall faculty size has been very modest, the obvious result is a steady increase in the tenure ratio, which, of course, cannot be sustained indefinitely.

In Table 8 below, we have divided tenure openings into three categories -- (1) the number replacing present faculty who retired or otherwise terminated, (2) the number of tenure openings in excess of (1) above that would be available if the tenure ratio were not increased from the prior year (i.e. coming from growth in overall faculty size), and (3) the remainder, which results in an increase in the tenure ratio.

TABLE 8

"SOURCE" OF TENURE AWARDS

	1974 No.	1975 No.	1976 No.	1977 No.	1978 No.	Total No.	Total %
Replacing Present Faculty	124	103	82	76	89	474	43%
Growth in Overall Faculty Size	101	33	17	41	33	225	20%
Increase in Tenure Ratio	57	92	91	90	77	407	37%
Total	282	228	190	207	199	1106	100%

We found that replacements accounted for only 43% of tenure awards, with the rest achieved through overall faculty growth and increasing tenure ratios. We are not in a position to comment on the broader implications of a continuing increase in tenure ratio, but it is obvious that an increase of 1% per year cannot be sustained indefinitely. There is also quite clearly a cost associated with this shift in faculty composition. Based upon the salary multiples developed on page 9, a 1% increase in the tenure ratio (assuming such increase was not the result of a decrease in overall faculty size) will have an immediate upward cost impact of about 0.2% of payroll, gradually increasing to 0.5% annually. Therefore, the 5% increase in the tenure ratio over the past 5 years will ultimately raise total annual payroll costs by 2.5% or more. It thus appears that the steady upward tenure drift has contributed to escalating college and university payroll costs and has possibly been borne in part by present faculty, if indeed their salaries have not kept up with inflation over the past decade.

Referring back to Table 7 the deaths and disabilities were, as expected, relatively few and concentrated at the older ages. In a large population such as the COFHE tenured faculty, we can expect the level of deaths and disabilities to remain fairly constant over time.

Retirements

Our primary focus in studying the tenured population was on the mandatory and non-mandatory retirements. To make certain we were not dealing with a period involving substantial changes in retirement practices, follow-up inquiries were made of the participating institutions, with their responses indicating that the policy in effect for retiring faculty did not change during the study period. Table 7 shows the number and average age of mandatory and non-mandatory retirements for each of the five years under study. As discussed in the Appendix, faculty reported as "considered retired but still teaching at the

institution" are included as if in active status. The number of mandatory retirements in 1974 and the number of non-mandatory retirements in 1978 are substantially higher than those for other years in the study period. The data was checked on an institution-by-institution and individual-by-individual basis and appears to be correct, although we cannot find any suitable reason for the wide swings in those years.

The average age for both mandatory and non-mandatory retirements remains relatively constant from year to year and, except for 1974, the total number of retirements each year amounts to 1-1/2% or less of the total active tenured faculty -- much less than might be expected in a group experiencing so little turnover. We studied the incidence of mandatory and non-mandatory retirement by age on a year-by-year basis and found no trend as to earlier or later retirement. Since the number of retirements in any given year is small, it would make any trend over such a short period difficult to discern in any event.

Table 9 shows this incidence of mandatory and non-mandatory retirements by age for the five-year study period. The largest number of mandatory retirements occurred at ages 65, 68, and 70, with just over half of the total occurring at age 65. The pattern of responses to the question "Was the faculty member given the choice to continue teaching at the time he/she retired?" shows that a number of faculty were not given the option to continue teaching, even though they retired at normal retirement rather than the institution's mandatory retirement date. In follow-up conversations, the institutions indicated that this was in fact the case and not the result of miscoded data, so we included faculty members in this category as mandatory retirements. (A list of normal and mandatory retirement ages by institution, prepared by COFHE, is included in the Appendix.)

TABLE 9

INCIDENCE OF TENURED FACULTY RETIREMENTS, DEATHS, AND DISABILITIES BY AGE

(1974 through 1978)

Age	Mandatory Retirements		Non-Mandatory Retirements		Total		Death and Disabilities		Total Reduction	
	No.	%	No.	%	No.	%	No.	%	No.	%
55	0	0%	2	2%	2	0%	2	4%	4	1%
56	0	0	4	3	4	1	2	4	6	1
57	0	0	4	3	4	1	2	4	6	1
58	0	0	1	1	1	0	5	10	6	1
59	0	0	4	3	4	1	3	6	7	2
60	0	0	12	11	12	3	3	6	15	3
61	0	0	2	2	2	0	5	10	7	2
62	0	0	22	20	22	6	6	11	28	6
63	0	0	3	3	3	1	5	10	8	2
64	2	1	7	6	9	3	3	6	12	3
65	143	51	25	22	168	43	4	7	172	39
66	11	4	13	11	24	6	3	6	27	6
67	4	1	8	7	12	3	2	4	14	3
68	69	25	6	5	75	19	3	6	78	17
69	11	4	1	1	12	3	0	0	12	3
70+	40	14	0	0	40	10	3	6	43	10
Total	280	100%	114	100%	394	100%	51	100%	445	100%

From the information in Table 9 we determined that of any group of faculty attaining age 55, 10% would die or become disabled prior to retirement, 23% would voluntarily retire, and the remaining 67% would be mandatorily retired. Only 10% presently retire at age 70 or later under current retirement policies, so an extension of mandatory retirement to age 70 could result in as much as 57% of the faculty population teaching for another one to five years, with an overall average of about three additional years. In later projections we show the maximum

potential impact of the new law by assuming that all mandatory retirements under current retirement policy would elect to continue teaching until age 70. There is a high degree of conservatism in this assumption. For example, if only one-third of present mandatory retirees would have elected to retire when they did anyway, the proportion of additional faculty continuing to age 70 would have dropped from 57% to 38%.

II - THE IMPACT OF AGE 70 MANDATORY RETIREMENT -- 1974-78 SIMULATION

In this section of the report, we retrospectively trace the impact of age 70 mandatory retirement as if it had become law in 1974. Further on we project the impact of age 70 mandatory retirement into the future, based on this model of the 1974-78 study period.

Starting with COFHE's actual experience, we developed a simulation of what might have occurred if mandatory retirement had been extended to age 70 just prior to the end of the 1974 academic year. In our model we made the following assumptions:

- Anyone mandatorily retired would have elected to continue teaching to the end of the academic year following his or her 70th birthday.
- Those who voluntarily retired would have done so even if age 70 mandatory retirement were enacted.
- Faculty members who were considered retired but in fact were still teaching would have continued to work regardless of the change in the mandatory retirement law.
- There would have been no effect on deaths or disabilities of tenured faculty.
- Tenure awards from outside and terminations of tenured faculty other than for retirement, death, or disability would not be affected, their net effect being to cancel each other out.

Overall, our assumptions will tend to overstate the employment and cost impact of mandatory retirement legislation, since some faculty members who were previously mandatorily retired would have either died or elected to retire prior to reaching age 70.

You will note from Table 9 that mandatory retirements occur between the ages of 65 and 70. Since roughly half occurred at age 65, it will take a full five years after enactment of the new law for the full impact to be felt. During the five-year period under study, there were 280 mandatory retirements. If actual mandatory retirement had been limited to those who would have reached age 70 during that period, the number would drop to 99, leaving 181 additional active faculty members in the system. After five years, we would expect the number retiring to increase sharply, because those who would otherwise have retired at age 65 have now reached age 70. Therefore, in the sixth and subsequent years a consistent pattern of retirements should once again develop.

Factors Affected By Institutional Policy Decisions

When age 70 mandatory retirement does become effective, institutions will have several courses of action open -- each with varying effects on payroll costs, tenure openings, and employment opportunities. Of course, different responses will be appropriate for individual member institutions, depending upon their particular circumstances, and in most cases the actual alternative selected will affect all three of the above factors.

In order to calculate the effect on each area of concern we examined five possible institutional responses. Two of the alternatives involve maintaining a constant payroll cost. Two others involve maintaining a constant total faculty size by reducing the number of tenure awards or new hires by the number of faculty that continue to age 70. Under the latter two alternatives, total payroll increases because of the high salary level of the previously retired faculty members. The fifth alternative illustrates the maximum possible increase in cost by assuming that new hiring and tenure awards are maintained at their previous levels, and the payroll cost of the faculty who elect to stay to age 70 is fully absorbed by the institution.

Table 10 summarizes the results of these calculations. Each alternative affects different segments of the faculty population, so those affected by each are shown inside a rectangle.

Alternative 1 - No Increase in Cost by Reducing Tenure Awards and New Hires

Under this alternative we assume the institutions reduce their tenure awards by the number who would have been retired had it not been for a change in the law. For instance, in 1974 the mandatory retirements would have dropped from 80 to 11, leaving 69 additional faculty members in an active teaching capacity. Therefore, tenure awards would have been reduced by 69, from 282 down to 213, and terminations of non-tenured faculty would have increased by 69, from 344 to 413. While active tenured faculty size was not affected, there would have been 69 more senior faculty members earning substantially higher salaries than the 69 who would have otherwise received tenure. To avoid this added cost required a reduction in hiring in the first year from 628 to 579.

Over the five-year period this produces reductions of 16% in tenure awards and 5% in new hires, and a drop in tenure expectation from 38% to 32%. Under this alternative, the tenured population size would have remained constant and the non-tenured group would have dropped by about 5% over the five years. Because the total faculty size would decline under this alternative from 8460 to 8332 as of 1/1/79, student/faculty ratios would be 1-1/2% higher as a result.

TABLE 10

5-YEAR IMPACT ON FACULTY COMPOSITION
IF AGE 70 MANDATORY RETIREMENT HAD BECOME LAW IN 1974

ACTUAL EXPERIENCE

	Non-Tenured				Tenured						
		Reductions				Tenure Awards		Tenure Reductions			
Cal. Year	Active	Tenure Awards	Termi-nations	New Hires	Active	From Within	From Outside	Mandatory Retirement	Non-Mandatory Retirement	Death and Disability	Other Termi-nations
1974	3009	282	344	628	5100	282	59	80	22	15	66
1975	3011	228	396	551	5258	228	62	56	21	15	73
1976	2938	190	370	479	5383	190	67	50	14	19	66
1977	2857	207	362	500	5491	207	72	47	19	20	62
1978	2788	199	352	491	5622	199	69	47	38	9	64
1979	2728	--	--	--	5732	--	--	--	--	--	--

ALTERNATIVE 1 -- NO INCREASE IN COST BY REDUCING TENURE AWARDS AND NEW HIRES

	Non-Tenured				Tenured						
		Reductions				Tenure Awards		Tenure Reductions			
Cal. Year	Active	Tenure Awards	Termi-nations	New Hires	Active	From Within	From Outside	Mandatory Retirement	Non-Mandatory Retirement	Death and Disability	Other Termi-nations
1974	3009	213	413	579	5100	213	59	11	22	15	66
1975	2962	184	440	519	5258	184	62	12	21	15	73
1976	2857	167	393	463	5383	167	67	27	14	19	66
1977	2760	186	383	485	5491	186	72	26	19	20	62
1978	2676	175	376	475	5622	175	69	23	38	9	64
1979	2600	--	--	--	5732	--	--	--	--	--	--

ALTERNATIVE 2 - NO INCREASE IN COST BY REDUCING NEW HIRES ONLY

	Non-Tenured				Tenured						
		Reductions				Tenure Awards		Tenure Reductions			
Cal. Year	Active	Tenure Awards	Termi-nations	New Hires	Active	From Within	From Outside	Mandatory Retirement	Non-Mandatory Retirement	Death and Disability	Other Termi-nations
1974	3009	282	344	490	5100	282	59	11	22	15	66
1975	2873	228	396	469	5327	228	62	12	21	15	73
1976	2718	190	370	438	5496	190	67	27	14	19	66
1977	2596	207	362	464	5627	207	72	26	19	20	62
1978	2491	199	352	450	5779	199	69	23	38	9	64
1979	2390	--	--	--	5913	--	--	--	--	--	--

ALTERNATIVE 3 -- REDUCE TENURE AWARDS AND INCREASE NON-TENURED TERMINATIONS ACCORDINGLY - NO EFFECT ON NEW HIRES

	Non-Tenured				Tenured						
		Reductions				Tenure Awards		Tenure Reductions			
Cal. Year	Active	Tenure Awards	Termi-nations	New Hires	Active	From Within	From Outside	Mandatory Retirement	Non-Mandatory Retirement	Death and Disability	Other Termi-nations
1974	3009	213	413	628	5100	213	59	11	22	15	66
1975	3011	184	440	551	5258	184	62	12	21	15	73
1976	2938	167	393	479	5383	167	67	27	14	19	66
1977	2857	186	383	500	5491	186	72	26	19	20	62
1978	2788	175	376	491	5622	175	69	23	38	9	64
1979	2728	--	--	--	5732	--	--	--	--	--	--

ALTERNATIVE 4 -- REDUCE NEW HIRES IN ORDER TO HAVE NO IMPACT ON OVERALL FACULTY SIZE

	Non-Tenured				Tenured						
		Reductions				Tenure Awards		Tenure Reductions			
Cal. Year	Active	Tenure Awards	Termi-nations	New Hires	Active	From Within	From Outside	Mandatory Retirement	Non-Mandatory Retirement	Death and Disability	Other Termi-nations
1974	3009	282	344	559	5100	282	59	11	22	15	66
1975	2942	228	396	507	5327	228	62	12	21	15	73
1976	2825	190	370	456	5496	190	67	27	14	19	66
1977	2721	207	362	479	5627	207	72	26	19	20	62
1978	2631	199	352	467	5779	199	69	23	38	9	64
1979	2547	--	--	--	5913	--	--	--	--	--	--

ALTERNATIVE 5 -- NO REDUCTION IN TENURE AWARDS OR NEW HIRES

	Non-Tenured				Tenured						
		Reductions				Tenure Awards		Tenure Reductions			
Cal. Year	Active	Tenure Awards	Termi-nations	New Hires	Active	From Within	From Outside	Mandatory Retirement	Non-Mandatory Retirement	Death and Disability	Other Termi-nations
1974	3009	282	344	628	5100	282	59	11	22	15	66
1975	3011	228	396	551	5327	228	62	12	21	15	73
1976	2938	190	370	479	5496	190	67	27	14	19	66
1977	2857	207	362	500	5627	207	72	26	19	20	62
1978	2788	199	352	491	5779	199	69	23	38	9	64
1979	2728	--	--	--	5913	--	--	--	--	--	--

Alternative 2 - No Increase in Cost, by Reducing New Hires Only

Under this alternative the institutions are assumed to place the burden on young PhD's seeking appointments. In this situation hiring would have dropped by 22% in the first year and by roughly 13% over the five year period. The overall faculty size would have decreased by 157, increasing student/faculty ratios by 1.9%. The level of tenure awards and tenure expectation are unaffected under this alternative.

Alternative 3 - Keep Faculty Size Constant by Reducing Tenure Awards and Increasing Non-Tenured Terminations Accordingly -- No Effect on New Hires

This is similar to Alternative 1 except that hiring would not be cut back to keep the institutions' cost increase at zero. The size of both tenured and non-tenured faculty would maintain its present level. After five years, the annual payroll would increase by approximately 3/4% because of the higher salaries of the faculty who chose to stay until age 70. As in the case of Alternative 1, there would be a 16% reduction in overall tenure awards during this period and a drop in the "tenure expectation" from 38% to 32%. There would be no effect on student/faculty ratios or the tenure ratio.

Alternative 4 - Keep Faculty Size Constant by Reducing New Hires Only

Under this alternative the institutions maintain the level of tenure awards but reduce hiring by an average of 7% over the period, in order to maintain the same overall faculty size. This is slightly more expensive than Alternative 3, since the institutions have experienced a 2.1% increase in the tenure ratio (from 67.8 to 69.9%) while keeping the faculty size constant. The cost of this alternative would be approximately 1-1/4% of payroll by the fifth year. Student/faculty ratios and expectation of tenure are unaffected under this alternative.

Alternative 5 - No Reduction in Tenure Awards or New Appointments

In this case the institutions would choose not to allow the change in the mandatory retirement law to affect either tenure awards or new hires, in which case the additional senior faculty would somehow be absorbed into the system. This would clearly be the most expensive alternative, resulting in an approximate 2-3/4% increase in total payroll by the fifth year. Total faculty size would increase by 181 over the period, decreasing student/faculty ratios by 2.1%.

Summary

Depending upon institutional reaction to age 70 mandatory retirement, the maximum impact on faculty employment would have been either a 16% reduction in tenure awards and tenure expectation along with a 1-1/2% increase in student/faculty ratios or a 13% reduction in new hires with a 2% increase in student/faculty ratios. If the COFHE institutions had opted to increase their payroll costs rather than restrict either new appointments or tenure openings, costs would have gone up about 1% the first year, increasing gradually to 2-3/4% by the end of the fifth year.

The additional cost of age 70 mandatory retirement in the sixth and subsequent years would have continued to increase beyond the 2-3/4% level of the fifth year only to the extent that the number of faculty in the critical retirement age years continues to increase. This we discuss in detail in the next section.

It is interesting to note that even if the institutions had reduced tenure awards on a one-for-one basis for each faculty member electing to stay beyond the old mandatory retirement age, tenure awards would only have dropped by roughly one-sixth during this entire five year transition period. This occurs in part because the growth in faculty size has

minimized the potential effect on tenure awards and new hires over the transition period. Because the faculty size is currently so large in relation to the number of retirements each year, even a modest amount of additional growth can fully offset the effect of a sharp reduction in the number of retirements on available openings. Furthermore, the impact on payroll costs is also minimized by the same relationship of currently large faculty size relative to the number of potential postponed retirements to be absorbed. We further explore these points in the next section of this report.

III - PROJECTED IMPACT OF AGE 70 MANDATORY RETIREMENT

In this section of the report we will explore the potential impact of mandatory retirement legislation on new appointments and payroll costs over the next 20 years.

Before making our calculations, we carefully examined the experience of the period January 1, 1974 through January 1, 1979 and based our projections on a continuation of that experience, recognizing that the faculty composition has changed over this period and will continue to change in the future. The more important considerations forming the basis of our projections are discussed below.

Retirement Projections

Obviously, one of the most important elements in this exercise is the projection of retirements into the future. By limiting our projections to 20 years, we were able reliably to base future retirements almost entirely on the current tenured faculty aged 45 and over. Deaths and disabilities are both few and predictable, and appointments with tenure appear to cancel out tenured terminations, thereby enabling us to project the aggregate number of retirements with a high degree of accuracy. Furthermore, by projecting retirements in five year intervals, we tend to eliminate the effects of year to year fluctuations. Therefore, in the absence of drastic changes in retirement patterns, our projected levels of retirement should closely parallel actual experience over the next 20 years.

To evaluate properly the effects of the new law, we first made retirement projections assuming no changes in retirement practice or policy by member institutions in response to the new legislation. Because of changes in retirement policy by several schools in the past year in response to the ADEA amendments, this scenario will not occur even if the amendment is changed to exclude tenured faculty permanently.

TABLE 11

PROJECTION OF RETIREMENTS AND OLDER FACULTY

(A) - FACULTY OVER AGE 60

No Extension of Mandatory Retirement Age

AGE	1/1/74	1/1/79	1/1/84	1/1/89	1/1/94	1/1/99
60 - 64	425	557	746	877	991	1013
65 +	173	224	274	366	434	491
Total	598	781	1020	1243	1425	1504

With Age 70 Mandatory Retirement Effective 1/1/79

AGE	1/1/74	1/1/79	1/1/84	1/1/89	1/1/94	1/1/99
60 - 64	425	557	746	877	991	1013
65 +	173	224	495	676	806	914
Total	598	781	1241	1553	1797	1927

* * * * *

(B) - FACULTY REMAINING ACTIVE AS A RESULT OF THE NEW LAW

	1/1/74	1/1/79	1/1/84	1/1/89	1/1/94	1/1/99
Total	N/A	N/A	221	310	372	423

* *

(C) - FACULTY RETIREMENTS

	(1) Previous Retirement Policy	(2) Age 70 Mandatory Retirement	Ratio (2) ÷ (1)
1979 through 1983	532	311	.585
1984 through 1989	678	589	.869
1989 through 1993	835	773	.926
1994 through 1998	953	902	.943

However, this approach is consistent with our goal of measuring the full potential impact of age 70 mandatory retirement. To the extent that member institutions have already responded to the ADEA amendment by changing to age 70 retirement policies, the effects of the law will be felt sooner rather than later. In light of the above, we used January 1, 1979 as the effective date of the law in our projections, since we felt that using January 1, 1982 would neither introduce additional accuracy into the calculations nor significantly affect the results.

Our assumptions as to the effect of the law on retirements, deaths, disabilities, and other terminations from the tenured population are the same as were used in simulating the effect of the law over the 1974-1978 period (page 17). As previously stated, our assumptions in this regard tend to overstate rather than understate the effect of the mandatory retirement legislation.

Table 11 summarizes the results of our population and retirement projections. At the top of the table (A) we show the size of the retirement age tenured population at five-year intervals from 1974 through 1999. Note that in the absence of an extension of mandatory retirement to age 70, the number of faculty in the over-age-60 category would roughly double over the next 20 years. This over-age-60 group increased by 31% from 1974 to 1979 and is expected to increase another 31% in the next 5 years. As we shall see, this steady and rapid rise in the number of older faculty approaching retirement turns out to be somewhat of a mixed blessing. On the one hand, it will create additional openings for junior faculty, and on the other hand, it will magnify the effects of the retirement law.

Table 11 (A) also shows the increase in the older population if mandatory retirement had become effective in 1979. At any point in time, the difference in the size of the groups with and without mandatory retirement legislation represents the number of senior faculty continuing in

an active status under the new law that would have otherwise been mandatorily retired (B). As expected, the biggest increase occurs within the first five years after the legislation takes effect and continues to rise roughly in proportion to the overall increase in older faculty. Table 11 (C) at the bottom shows the number of expected tenured faculty retirements over 5-year intervals from 1979 through 1999, both before and after the effect of age 70 mandatory retirement. Note the sharp decrease expected in the first five years under the new law and the rapid recovery in subsequent years to near the levels under old retirement policies. Retirements under the new law never quite catch up to previous levels because of the steady increase in the number of faculty approaching retirement during the entire 20-year period.

Turnover of Junior Faculty

We found that the annual turnover rate of non-tenured faculty (i.e. number of reductions divided by number of faculty) remained at roughly 20% throughout the 1974-78 period. In our projections we assumed that this rate must be maintained, or at least not increase substantially, in order to give the institutions ample opportunity to evaluate young faculty members before making the tenure award decision. We mention this because in some of our preliminary calculations, we found that both hiring and tenure awards could be maintained at almost any level if the non-tenured population is allowed to shrink to a level where the average length of non-tenured service is no more than one or two years.

Tenure Expectation

We further noted that what we referred to as "tenure expectation" (i.e. the ratio of tenure awards to total non-tenured faculty reductions in a given year) has remained fairly constant over the past four years at about 36%. If, because of severe cost constraints, an institution is faced with either terminating a faculty member who would have otherwise been awarded tenure or not hiring a new faculty member, we assume that most decision makers would opt for the latter. This assumption is based

on the probable adverse effect that a sharp reduction in tenure expectation might have on the institution's ability to attract qualified junior faculty, and the recognition that it is easier to make a decision that has an adverse effect on someone who is not yet employed. Therefore, in our projection model, we have assumed that the number of tenure awards would be determined by the size of the non-tenured faculty population -- by maintaining a tenure expectation of 36% and an annual turnover rate of 20%.

Standard For Comparison

In our analysis of faculty flow, we found that hiring had dropped off significantly from the level of the early 1970's, but had leveled off at roughly 500 per year over the past three years. Therefore, we have used these 500 annual appointments as a benchmark in assessing the potential impact on future openings for junior faculty.

The Cost of the Age 70 Law

As previously discussed, institutions will have several possible courses of action in dealing with the effects of the new law, and the course chosen will undoubtedly vary among the COFHE institutions. It is important to recognize at the outset that there will be an additional cost associated with age 70 mandatory retirement as long as older faculty elect to teach beyond an institution's present mandatory retirement age. The maximum cost impact occurs when the institution bears the increased payroll expense for those faculty members who elect to continue to age 70, without allowing either new hires or tenure awards to be affected.

Our projections under worst case assumptions show an increase in annual payroll costs of 3-1/2% by the end of the five-year transition period, gradually rising to 6-1/2% when the faculty composition presumably matures in about 20 years.

An institution's decision to cut payroll costs elsewhere, such as by reducing new appointments, does not reduce the actual cost of the older faculty members staying on -- it merely serves to mitigate the overall effect on payroll costs.

In the following analysis we address the implications of the mandatory retirement law if this added cost is translated into reduced employment opportunities for junior faculty by presenting faculty flow projections under two scenarios:

- Constant payroll budgets
- Constant faculty size

Constant Payroll Budgets

The COFHE data indicates that, in the aggregate, member institutions have been increasing total faculty size by roughly 0.6% per year while also experiencing a 1% annual increase in the tenure ratio. In the absence of passing these costs on to current faculty through less than cost-of-living salary increases, this adds up to an increase in overall payroll costs of roughly 1% per year on top of inflation. If these rising payroll costs cannot be met in the future, then new appointments will have to be reduced -- even in the absence of mandatory retirement legislation.

In Table 12 we show the results of our constant payroll projections at five-year intervals before the effect of the new law.

The numbers in the boxes show the number of active non-tenured and tenured faculty as of the beginning of the indicated period, whereas the numbers of new hires, tenure awards, retirements, terminations, and deaths and disabilities are for the full five year period. In order to simplify our calculations, we assumed that the entire non-tenured population as of the beginning of the period will leave the group by the end of five years. The new hires over the period then become the non-

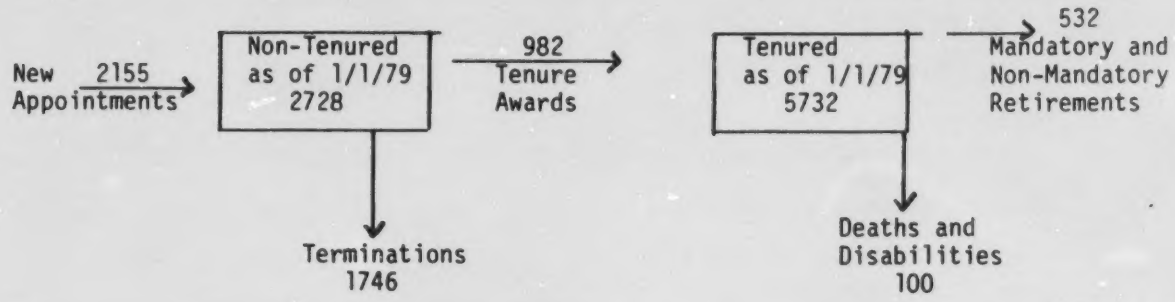
TABLE 12

FACULTY POPULATION PROJECTIONS

CONSTANT COST AND NO EXTENSION OF MANDATORY RETIREMENT AGE

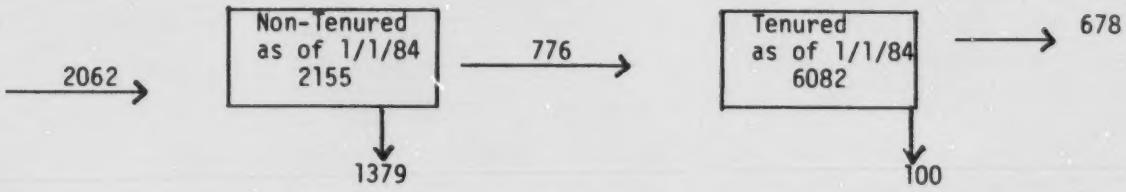
1979
thru 1983

1/1/79 Tenure Ratio - 67.8%



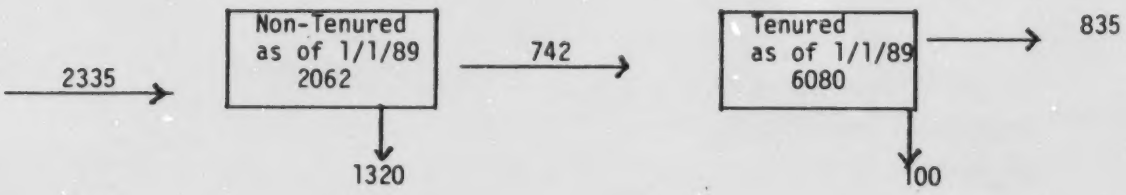
1984
thru 1988

1/1/84 Tenure Ratio - 73.8%



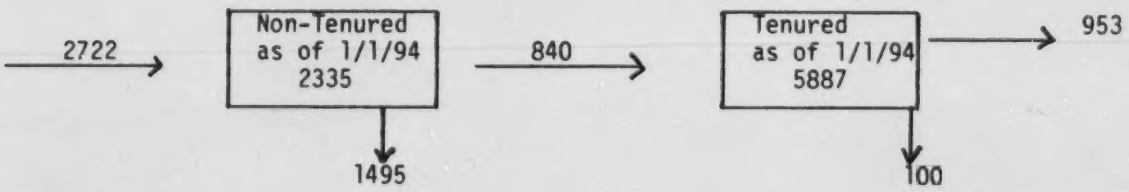
1989
thru 1993

1/1/89 Tenure Ratio - 74.7%



1994
thru 1998

1/1/94 Tenure Ratio - 71.6%



As of 1/1/99

1/1/99 Tenure Ratio - 67.6%

tenured faculty existing as of the beginning of the next five-year period. Our model also includes a constant 36% tenure expectation; therefore we assume that 36% of the non-tenured, active faculty at the beginning of a five year period will be awarded tenure, and the remaining 64% will terminate.

Since we are using 2500 new hires per five-year interval as our reference point, we can easily see from Table 12 the potential impact of the constant payroll constraint on new appointments at each five-year interval.

The lowest level of new hires occurs over the next 10 years, representing a 17% decrease over prior levels. Since the level of tenure awards is determined by the non-tenured population at the beginning of a period, it remains close to 1000 in the first five years of our projection. It then drops to 776 and 742 over the next two five-year periods respectively, for a decrease of about 17% -- reflecting the earlier 17% drop in new hires. By 1989 the total faculty size has dropped to its lowest level of the 20 year period, 8142, for a 4% decrease from the 8460 active in 1979. We can see that as retirements continue to increase, the level of new hires approaches previous levels by 1989-1993, followed by a recovery in the level of tenure awards. The tenure ratio, which increased to a maximum of 74.7% in 1989, returns to 67.6% by 1999.

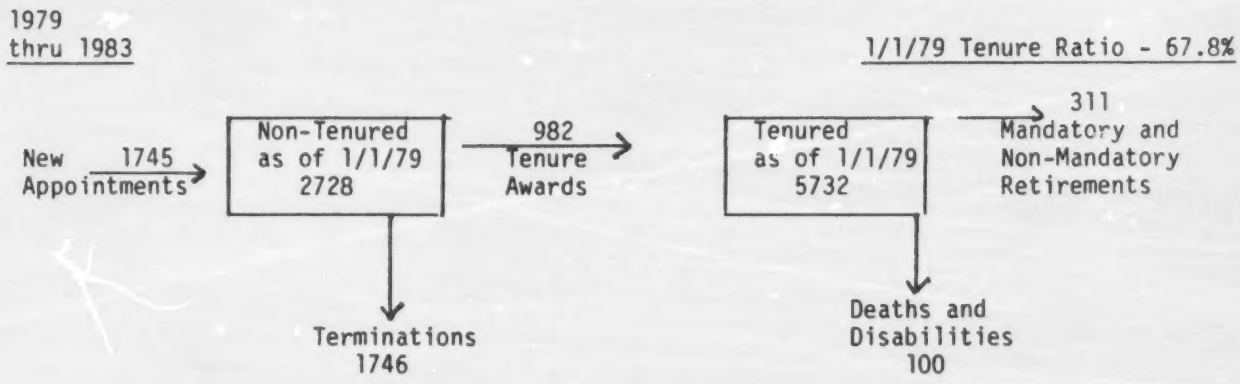
We then made the same projections at five-year intervals assuming mandatory retirement legislation became effective in the academic year ending in 1979.

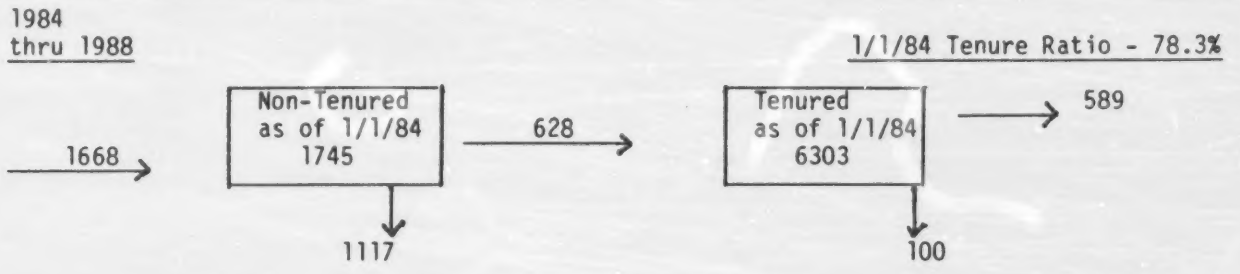
Table 13 illustrates the results. Under our model, since tenure awards are determined by the number of active non-tenured faculty at any point in time, the full impact of the decreased retirements falls first on new hires . As expected, the impact on hiring is heaviest during the five-year transition period, dropping by an additional 19%. In subsequent years, the number of tenure awards is similarly reduced as a result of the reduction in hiring from the prior five-year period.

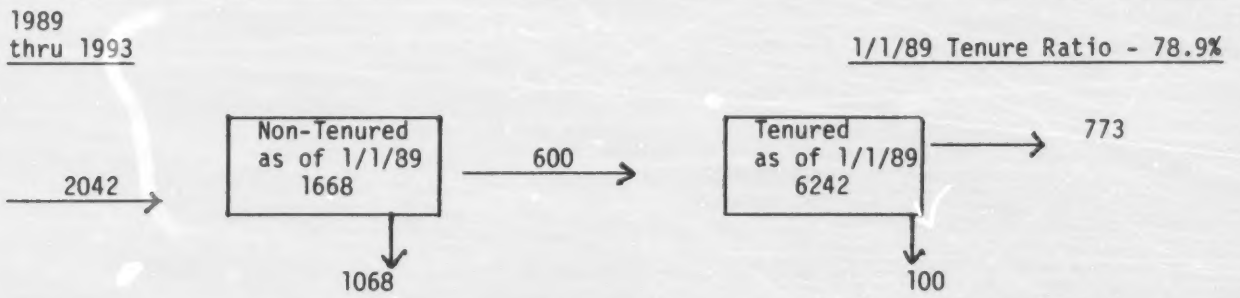
TABLE 13

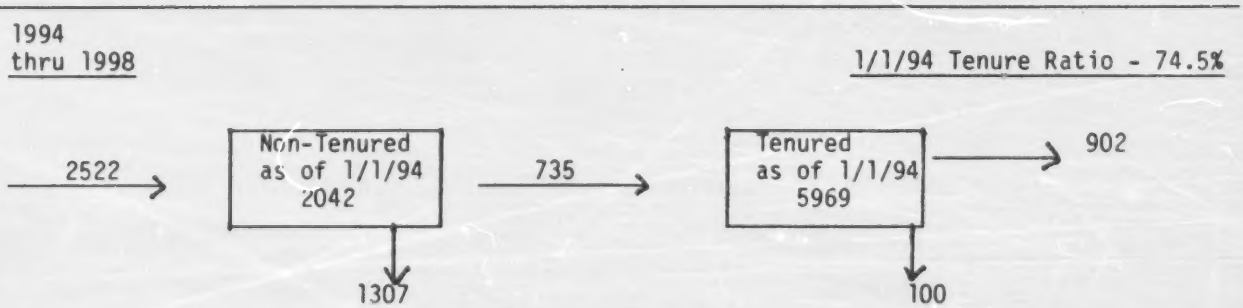
FACULTY POPULATION PROJECTIONS

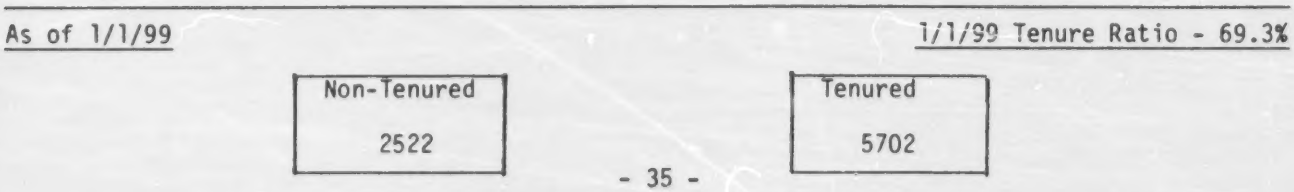
CONSTANT COST AND AGE 70 MANDATORY RETIREMENT LAW EFFECTIVE 1/1/79











The tenure ratio rises sharply to 78.3% in 1984 and finally drifts back to 69.3% in 1999. Total faculty size also drops 6-1/2% to its lowest level of 7910 by 1989. As increasing numbers of retirements emerge, new hires and tenure awards have returned, by 1994-1998, to 93% and 87% of their respective levels prior to the effects of the law, and the system appears to have attained relative equilibrium by 1999. The results of these projections are also displayed in graphic form in Figure 1 (page 42).

While these results do show a sharp cutback in new hires, it is not nearly as severe as one might have expected -- keeping in mind that these are "worst case" assumptions. Furthermore, Table 13 illustrates the combined effect of a constant budget along with age 70 mandatory retirement. There is a substantial promotional element in tenured faculty salary levels, as evidenced by the steadily increasing average salaries by five-year age groups shown in Table 5. As the tenured population ages, promotional increases for this large group would tend to result in greater payroll costs. In the preceding projections, we have placed the heavy burden of a constant budget on new hires by reducing hiring to offset the full promotional element of salary increases for existing tenured faculty, as well as to offset the salaries of faculty that elect to remain to age 70. In actual practice, it does not seem likely that this would occur.

If budgets are allowed to increase at least modestly during the five-year transition period following the effective date of the mandatory retirement legislation, the impact on hiring and tenure awards would be far less. This is demonstrated in the next set of projections in which we have kept total faculty size constant but allowed cost to increase to some degree because of the greater proportion of senior faculty.

Constant Faculty Size

In Table 14 we project faculty flow assuming a constant population combined with no extension of mandatory retirement. In this case,

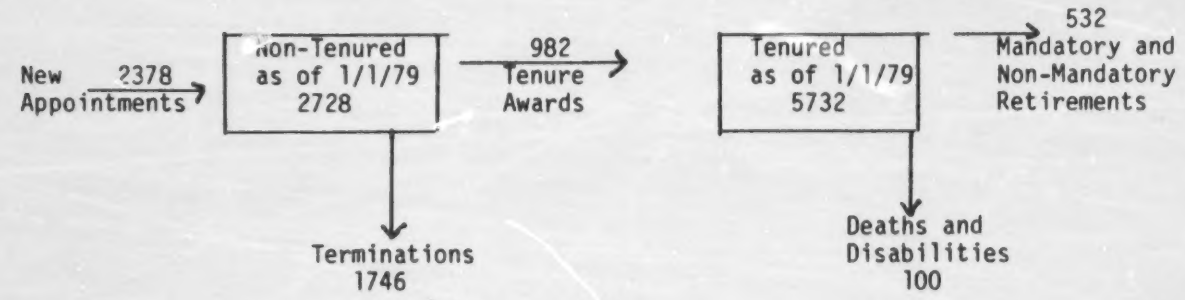
TABLE 14

FACULTY POPULATION PROJECTIONS

CONSTANT FACULTY SIZE AND NO EXTENSION OF MANDATORY RETIREMENT AGE

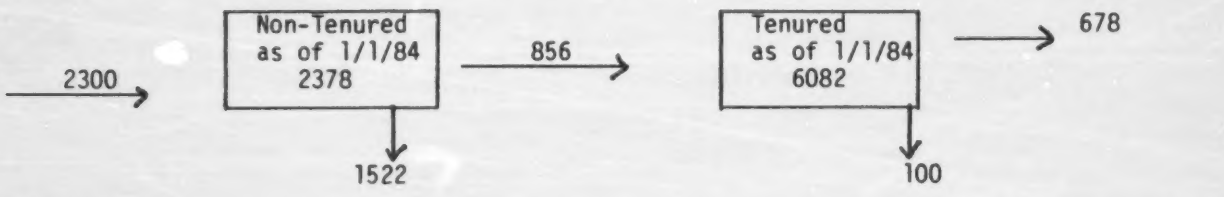
1979
thru 1983

1/1/79 Tenure Ratio - 67.8%



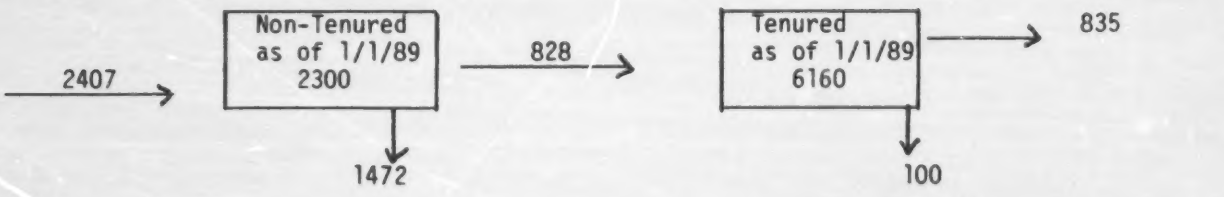
1984
thru 1988

1/1/84 Tenure Ratio - 71.9%



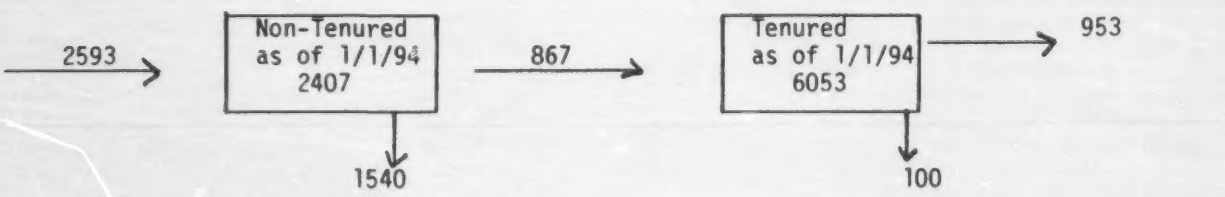
1989
thru 1993

1/1/89 Tenure Ratio - 72.8%



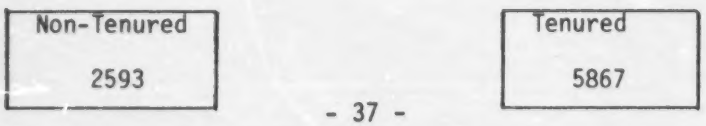
1994
thru 1998

1/1/94 Tenure Ratio - 71.5%



As of 1/1/99

1/1/99 Tenure Ratio - 69.3%



hiring can be expected to fall by about 8% at the lowest point, (1984-1989), followed by an 8% drop in tenure awards five years later.

The tenure ratio rises to a maximum of 72.8% in 1989 (at a slower rate than the increases over the 1974-1979 period), and then drops back to 69.3% by 1999. The result of this tenure drift is payroll cost peaking in 1989 at 2-3/4% above its 1979 level, after which the increased level of retirements helps relieve the payroll pressure. As in the constant payroll projections, increasing numbers of retirements allow a return of new appointments and tenure awards to their old levels by the end of the 20 year period.

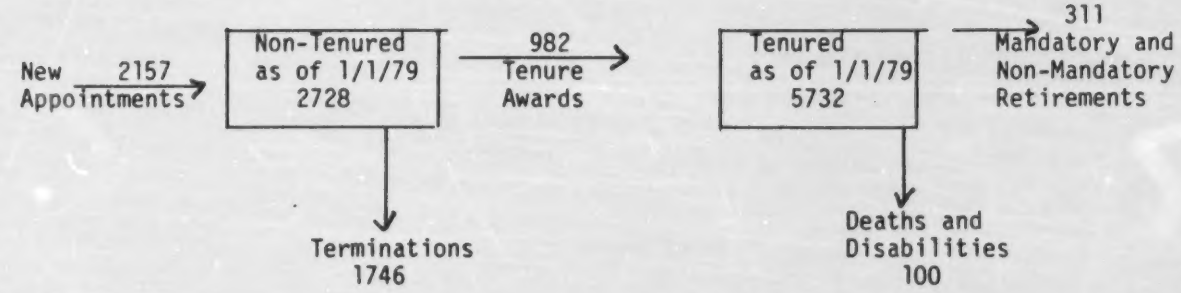
When the mandatory retirement law is imposed at the same time as a policy of constant faculty size, some further reductions in junior faculty openings and increases in payroll cost occur, as can be seen from Table 15. The maximum additional reduction in new hires is 10%. As in the case of the previous projections, hiring turns around and starts increasing by 1994 because of the increase in the numbers of retirements. Results of these projections are also displayed in graphic form in Figure 1 (pg. 42). The tenure ratio reaches a maximum of 75.5% in 1989 and then decreases to 71.5% by 1999. By the end of the first five years, costs would further increase by approximately 1-1/2%. Cost impact of the new law levels off at about 2% annually after 1989.

TABLE 15

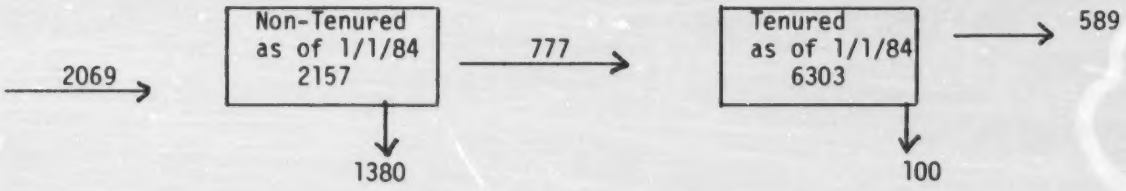
FACULTY POPULATION PROJECTIONS

CONSTANT FACULTY SIZE AND AGE 70 MANDATORY RETIREMENT LAW EFFECTIVE 1/1/79

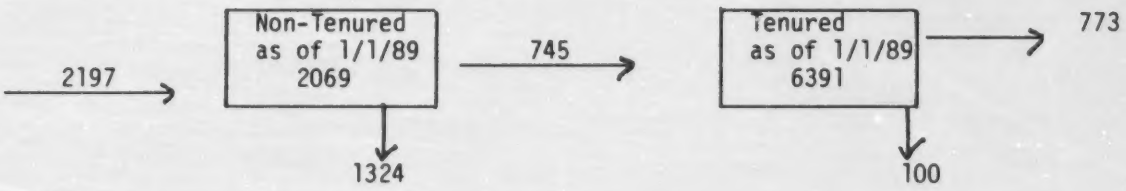
1979 thru 1983 — 1/1/79 Tenure Ratio - 67.8%



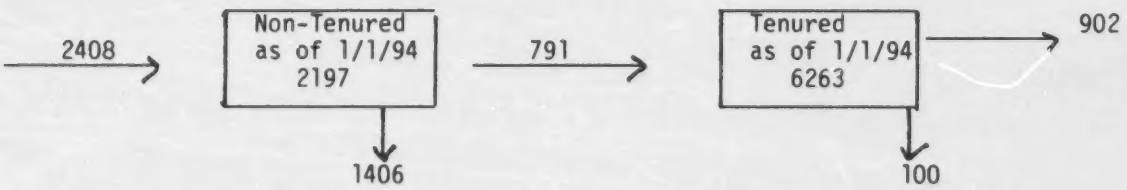
1984 thru 1988 — 1/1/84 Tenure Ratio - 74.5%



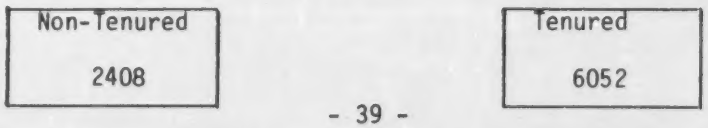
1989 thru 1993 — 1/1/89 Tenure Ratio - 75.5%



1994 thru 1998 — 1/1/94 Tenure Ratio - 74.0%



As of 1/1/99 — 1/1/99 Tenure Ratio - 71.5%



To summarize, if COFHE institutions were to consciously and collectively keep total faculty size constant in the face of the new mandatory retirement law, we can summarize the short-term and longer-term employment and cost impact as follows in Table 16:

TABLE 16

SUMMARY OF CONSTANT FACULTY SIZE PROJECTIONS

A - Effect on New Appointments

	Over First 5 Years	Over Second 5 Years	After 20 Years When Faculty Composition is "Mature"
Without Change in Mandatory Retirement Law	- 5%	- 8%	+ 4%
Isolated Impact of Mandatory Retirement Law	- 9%	- 9%	- 7%
Total	-14%	-17%	- 3%

B - Cost Increase as a % of Payroll

	At the End of 5-Year Transition Period	After 10 Years	After 20 Years When Faculty Composition is "Mature"
Without Change in Mandatory Retirement Law	2%	2-3/4%	1-1/2%
Isolated Impact of Mandatory Retirement Law	1-1/2%	2%	2%
Total	3-1/2%	4-3/4%	3-1/2%

Looked at another way, if the decision is to maintain present faculty size in the face of age 70 mandatory retirement as well as constant payroll

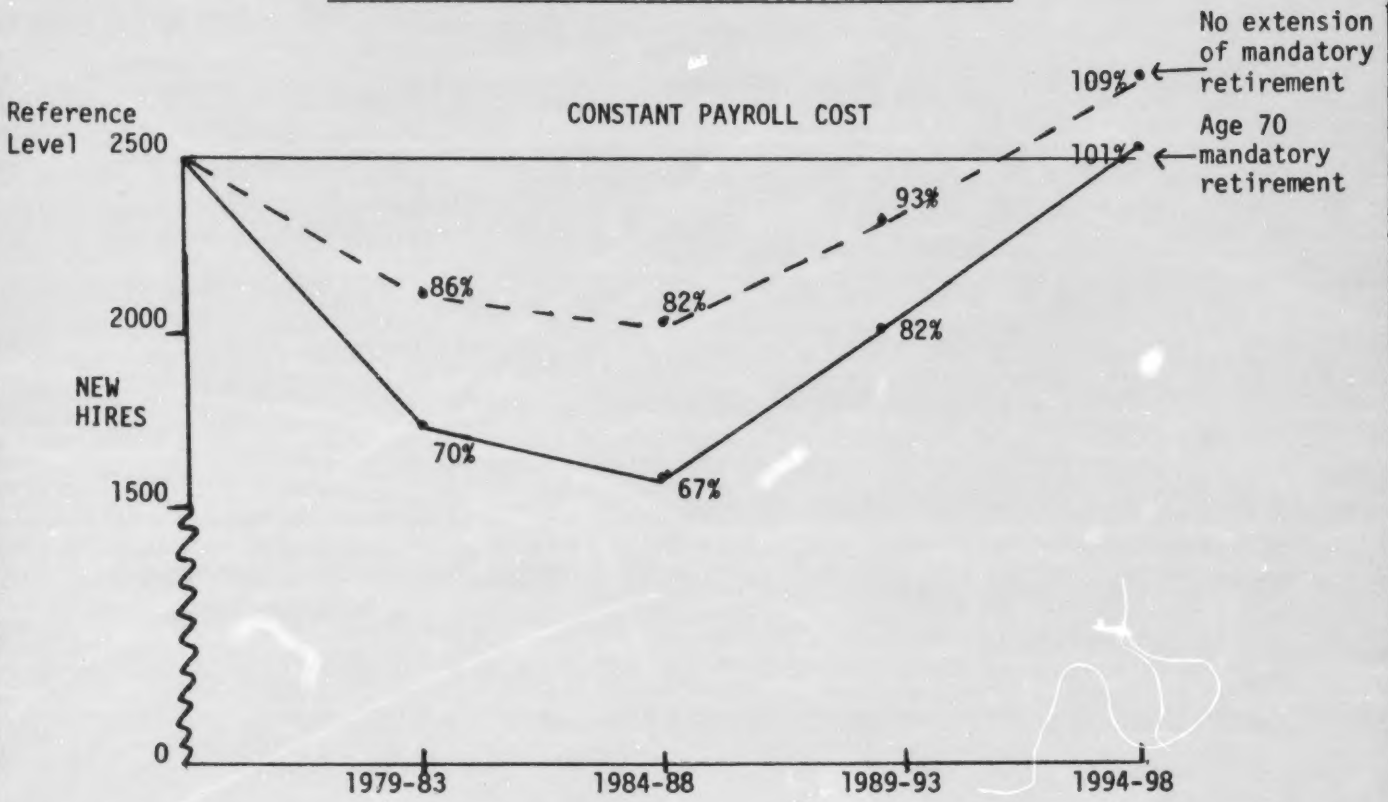
budgets, our projections show that faculty openings will fall by 17% (Table 16-A) at their lowest point -- when combined with a gradual reduction in real income for faculty of about 4-3/4% (Table 16-B) in terms of today's dollars.

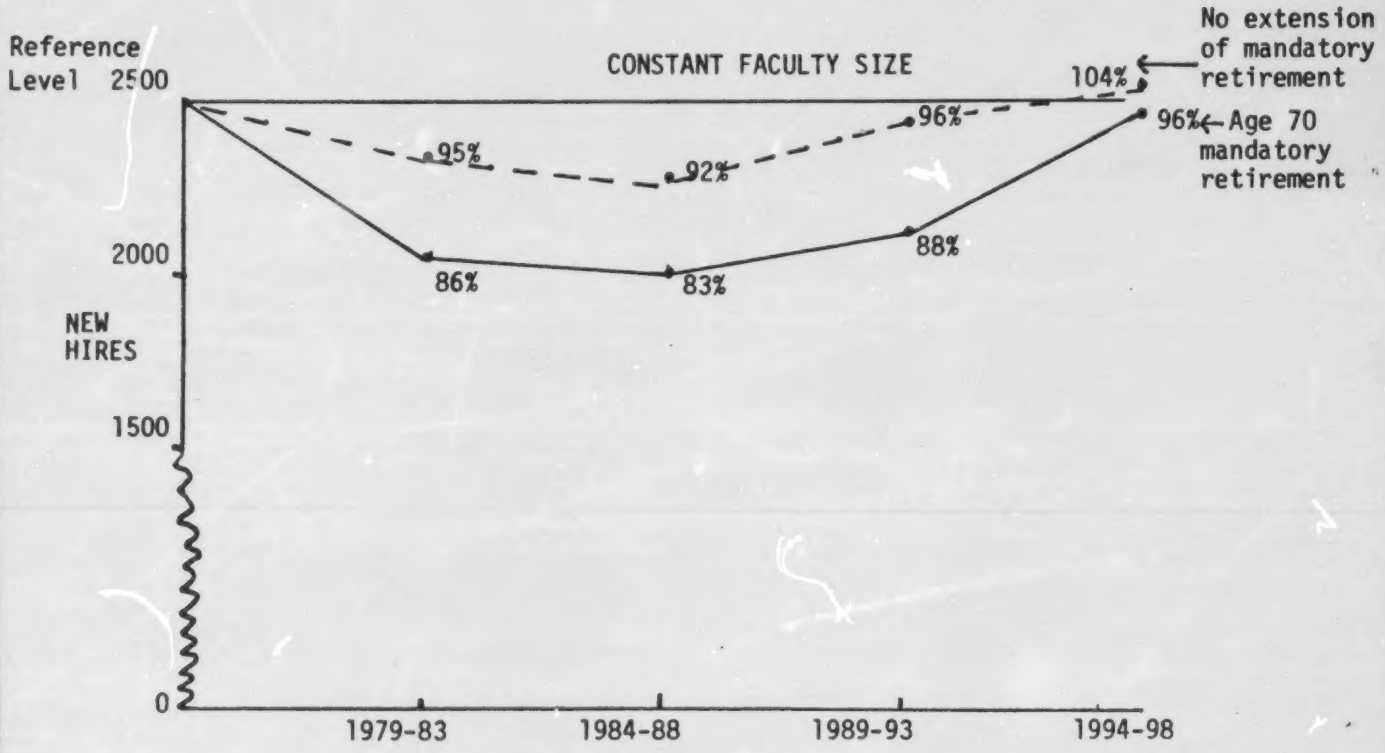
Impact on Individual Institutions

It must be kept in mind that this study is based on the combined data of 27 participating COFHE institutions, and the results for any one institution will depend upon many factors including current retirement policy, age composition of the present faculty, incidence of non-mandatory retirement, etc. Therefore, maximum added costs after five years could range from as much as 15% of payroll for the school with a mature population that previously had strictly adhered to an age 65 mandatory retirement policy, down to no additional cost at all for a school which already administers a mandatory retirement policy of age 70 or later.

Figure 1

PROJECTED LEVELS OF OPENINGS FOR JUNIOR FACULTY





IV - SUMMARY OF FINDINGS

On the basis of the 1974-1978 retirement experience, one might expect the impact of the mandatory retirement law to be quite severe, since over 50% of older faculty have been mandatorily retired prior to age 70. However, because the number of retirements was small relative to the total faculty size in 1974, the COFHE institutions could have adjusted to the new law at that time through relatively modest increases in payroll -- an estimated 1% in the first year rising to less than 3% by the end of the fifth year. On the other hand, the adjustment could have been made at no additional cost to the institutions through a 13% reduction in new hires or a 16% reduction in tenure awards -- all "worst case" estimates.

However, we also found that retirements and other terminations of tenured faculty accounted for only 43% of the total number of tenure awards during the 1974-78 period. The rest were achieved through overall faculty growth and increasing tenure ratios, causing payroll costs to rise (or faculty salaries to fall) by an estimated 1% per year. Therefore, in light of the prospect of tighter budgets and increasing numbers of faculty approaching retirement, we can anticipate that the mandatory retirement law will have a greater impact in the future than the 1974-78 calculations would suggest.

This is borne out in our projections. If COFHE institutions are forced to maintain no-growth budgets as a result of declining enrollments in the future, while at the same time having to adjust to mandatory retirement legislation, the combined effect results in hiring and tenure awards being reduced by one-third from their current levels for a period of roughly 10 years. It is important to note that only half of the reduction in faculty openings is attributable to age 70 mandatory retirement -- the other half would occur in any case under no-growth budgets.

Within 20 years, faculty openings would again approach current levels because of the steady increase in retirements. This would indicate that abrupt reductions in faculty openings might be avoided by deferring any significant budget cutting until after the five-year period of adjustment to the mandatory retirement law. At that point, faculty will be retiring in increasing numbers allowing a cutback in payroll costs with a more modest effect on employment opportunities.

It is notable that the one-third reduction in faculty openings assumes that the entire burden of constant budgets and age 70 mandatory retirement will fall on new PhD's seeking employment. It is more likely that some of the impact would be absorbed by present faculty in the form of smaller pay increases.

Finally, it is worth repeating that all of our calculations are on the basis of "worst case" assumptions, with no allowance for early retirement incentive programs. Therefore, we do believe our projections overstate the overall effect of age 70 mandatory retirement. However, the conservatism built into our model does not seriously distort the potential impact on faculty openings and faculty salaries that might occur independent of the mandatory retirement law, if the COFHE institutions have to adjust to no-growth budgets in the future -- a subject that has serious implications all its own.

APPENDIX

DATA COLLECTION AND SCREENING

Based on input from Tillinghast, Nelson & Warren and Prof. Blackburn of Duke University as to requirements for the study, the Consortium requested data from each of its 30 member institutions in March, 1979. A copy of this data request including the instructions for the data used in the study (referred to as Part A) is on pages A4 - A9 of this appendix. Twenty-nine of the thirty institutions submitted data in response to this request. The COFHE staff collected the data in machine readable format, supplemented by printouts which they reviewed for initial accuracy and completeness. The machine readable copy and the instructions for corrections were then turned over to TN&W. After making the indicated corrections, we screened the data for missing, invalid, or suspicious items. Table 17 lists the specific tests that were performed. An "error list" was produced for each institution, including total count and average salary for each of the various categories of data received. This information was returned to COFHE for verification or correction while we continued our analysis.

As a final check, each institution was provided with the following computer output for verification or correction:

- "Flow of Lives" table -- showing year-by-year the number and average age of tenured and non-tenured faculty, new hires, mandatory retirements, non-mandatory retirements, and terminations.
- List of all faculty coded as retired.
- List of all faculty aged 60 and over coded as departures.
- Summary of data by type and status, including count and average salary.

TABLE 17

ERROR TESTS

CODE	DESCRIPTION
A	Invalid Mandatory Ret Code - not 1 or 2 for retired faculty; or not 0 or blank for non-retired faculty
B	Invalid Status Code
C	Invalid Type Code - not 1, 2, or 3
D	Institution Code - Doesn't match this institution
E	Social Security Number (I.D. #) - all blanks and/or zeros
F	Sex - not 1 or 2
G	Tenure Code - not 1 or 2
H	Missing date of birth; or age < 20; or age > 80 for retired faculty; or age > 75 for non-retired faculty
I	Missing Date Entered Tenure Track; or entered tenure track before age 20 or after age 65
J	Entered tenure track after 12/78
K	Date of Tenure earlier than date entered tenure track; or missing date of tenure
L	Tenured after 12/78
M	Reported as non-tenured but has a tenure date
N	Reported as active but has a date of departure or retirement
Ø	Retired (Mandatory) before age 65; or retired (non-mandatory) before age 40
P	Retired or departed before 1/74 or after 12/78; or missing date of retirement/departure
Q	Retired or departed before entering tenure track
R	Retired or departed before date of tenure
S	Low 9-month salary rate - < $10,000 for tenured faculty; or < $7,500 for non-tenured faculty
T	High 9-month salary rate- > $65,000 for tenured faculty; or > $55,000 for non-tenured faculty

Data for 27 of the 29 institutions was considered usable for purposes of the study. Table 18 lists these participating institutions.

TABLE 18

PARTICIPATING MEMBER INSTITUTIONS

Amherst College
Barnard College
Brown University
Bryn Mawr College
Carleton College
Cornell University
Dartmouth College
Duke University
Harvard University
Massachusetts Institute of Technology
Mount Holyoke College
Northwestern University
Pomona College
Princeton University
Radcliffe College
Smith College
Stanford University
Swarthmore College
Trinity College
The University of Chicago
University of Pennsylvania
The University of Rochester
Vanderbilt University
Washington University
Wellesley College
Wesleyan University
Williams College

Part Time Faculty

Table 19 indicates that part-time faculty make up a relatively small part of the total population. Less than 5% of currently active faculty are part-time, and under 1% are less than 1/2 time. Less than 11% of retiring faculty were part-time at retirement, and approximately 1% were less than 1/2 time. Based on this information, we did not perform additional computations to reflect full-time/part-time status in our projections, since they would not have had a significant effect on the results. However, we annualized salaries to a full-time basis in order to minimize distortion in average compensation by age/service category.

TABLE 19

FULL TIME/PART TIME FACULTY COMPOSITION

Active Faculty as of January 1, 1979

Status	
Full time	8,027
Over 1/2 but less than full time	195
1/2 time	130
Less than 1/2 time	43
Considered retired but still teaching	65
Total	8,460

Retirements (1974 through 1978)

Status at Retirement	
Full time	361
Over 1/2 but less than full time	9
1/2 time	29
Less than 1/2 time	5
Total	404

Finally, data for those faculty that retired or otherwise terminated prior to the start of the study period (January 1, 1974), or entered tenure-track status after the end of the study period (December 31, 1978) was not used, and all status changes after the end of the study period have been ignored.

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DATA REQUEST

March 7, 1979

Member Institutions

Amherst College
Barnard College
Brown University
Bryn Mawr College
Carleton College
Columbia University
Cornell University
Dartmouth College
Duke University
Harvard University
The Johns Hopkins University
Massachusetts Institute of Technology
Mount Holyoke College
Northwestern University
Pomona College
Princeton University
Radcliffe College
Smith College
Stanford University
Swarthmore College
Trinity College
The University of Chicago
University of Pennsylvania
The University of Rochester
Vanderbilt University
Washington University
Wellesley College
Wesleyan University
Williams College
Yale University

To: COFHE Retirement Study Contacts

From: Katharine H. Hanson
Executive Director

Subject: Data Request for Phase I of COFHE Retirement Study

As you know, the Consortium study of faculty retirement is now underway with the selection of Dr. Jack Blackburn of Duke University as the principal investigator and Mr. Russell Southworth of Tillinghast, Nelson & Warren as the actuarial consultant. The last two months have been devoted to the development of the research plan and the identification of the list of data needed by both researchers to conduct the study. The researchers and the advisory subcommittee agreed that the data collection for Phase I of the study should be done with one major institutional questionnaire. It was agreed that the most efficient way to gather the needed data and the best way to assure the accuracy of the data is to require each institution to provide their verified information on a computer tape or punch cards in a standard format. This approach to data collection means that the responsibility for checking the completeness and accuracy of the data lies with each institution and not with the researchers.

The survey questionnaires have two distinct sections: Part A (yellow) requests data about each faculty member which should be readily available, accurate and in most cases already in a computer file. Part B (green) requests some data which may not be readily available and will require searching through your manual faculty records systems or even the memories of deans and department heads. Part A must be returned by April 3. Part B may be delayed but must be returned no later than May 15. All material should be mailed to the COFHE office.

The advisory subcommittee is concious of the fact that the completion of this survey will involve a major effort and commitment of staff time at each member institution. However, it must be emphasized that the total study involves a much larger amount of grant money and many months of work by the researchers and the COFHE office. Your cooperation and attention to the accurate completion and timely submission of the requested data will be your single most important contribution to the success

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of the study. Without this attention and care in provision of data, the results will be of little value to your institution or to the Consortium. The researchers have requested that all questions that arise with respect to the completion of the items in the survey be discussed with the COFHE staff in order to minimize the chance of differing interpretations resulting in non-comparable data. We have made a great effort to be precise in our definitions and instructions and have tried to only include items of clear import to the research. If any item requested is completely unavailable or will require extraordinary effort to obtain, please contact COFHE.

You will note that Part A must be submitted in machine readable form but Part B which will take more "handwork" may be submitted on tape, punchcards or as hand entered data on a computer print out of the questions (in the specified format). We request that you make at least three hard copies of your Part A response. We ask that two hard copies be submitted in addition to the tape or computer cards and one be retained in your office so that any corrections or changes can be done with minimal effort and on short notice.

The survey form (Exhibit I Part A and Part B) is accompanied by the following attachments:

Exhibit I-A	code designation for each institution (fields 1 & 2 on survey)
Exhibit I-B	list of 4 digit HEGIS codes to be used to designate the faculty members' departments. (fields & on the survey)
Exhibit I-C	magnetic tape specifications which must be used if a computer tape is submitted.

Please read each carefully and call me if you have any questions about the data requested, the definitions or the required format for data submission. I will be calling each of you within the next couple of weeks to discuss the survey in detail and to answer any specific questions or problems of interpretation which arise as you gather the data needed.

Instructions for Completion of Exhibit I - Part A

This part of the survey seeks information which should be readily available about every arts and sciences tenure track member of your faculty. The time period for the data to be provided is from the beginning of your academic year 1973-74 through December 31, 1978.

Your response to Part A of this survey must be submitted on computer tape or on punchcards exactly in the field specified on Exhibit I. Part A consists of questions 1 - 11 which occupy fields 1 - 39 and should be submitted to the COFHE office by no later than April 3, 1979. The following comments are included as additional instructions or clarification which may help you provide us with accurate responses to the questions.

2. Social Security Number	This is an optional entry. Some schools may wish to substitute a special code (known only within that institution) in order to use this study for their own purposes.
5. Date of entry to tenure tract at your institution	This means the date when the faculty member assumed his/her tenure track title, which is not necessarily the date of first employment.
9. Status	Active faculty - We assume most, if not all, younger faculty on tenured tract are full time. However, it is not unusual for older faculty close to or beyond normal retirement to be teaching on a less than full time basis. Retirements - If it is unclear whether a person has retired early or voluntarily departed for other reasons, consider anyone age 58 or over as a retirement and under age 58 as a termination. Note: Accurate information as to the teaching status (i.e., full time, half time, etc.) of active faculty and retired faculty just prior to retirement is of primary importance in the first phase of the study, so particular attention should be given to completing this item properly.

11. Mandatory Retirement — This is another very important item. Retirement should be considered mandatory only if the faculty member is not given the opportunity to continue teaching. For example, an institution may have a normal retirement date at which time the faculty member is given the option of extending his employment on a full time basis for a specific period (say, 2 years) or on a less than full time basis for a longer period (say, 4 years). In this situation, retirement should be considered mandatory only if the member continued teaching for 2 more years at full time or 4 more years at less than full time.

We urge you to provide any additional explanatory notes on your responses to questions 9 and 11 (as well as any others) that might help the researchers understand the range and variety of circumstances that determine status within your particular system of personnel policies.

CONSORTIUM ON FINANCING HIGHER EDUCATION

Exhibit I - Part A

ALL ARTS AND SCIENCE FACULTY ON TENURED TRACK

(Study Part A - Data Due by April 3, 1979)

Description	Field	Active faculty	Retirements since the beginning of the 73-74 academic year to 12/31/78	All other departures or terminations since the beginning of the 73-74 academic year to 12/31/78
1. Institution code	1-2	See Exhibit I-A for institution code	See Exhibit I-A for institution code	See Exhibit I-A for institution code
2. Social Security Number	3-11			
3. Date of birth	12-17	MM/DD/YY	MM/DD/YY	MM/DD/YY
4. Sex	18	1 = Male 2 = Female	1 = Male 2 = Female	1 = Male 2 = Female
5. Date of entry into tenured track status at your institution	19-22	MM/YY	MM/YY	MM/YY
6. Tenured	23	1 = Yes 2 = No	1 = Yes 2 = No	1 = Yes 2 = No
7. Date of tenure	24-27	MM/YY	MM/YY	MM/YY
8. "Nine-Month" salary rate (rounded to nearest 100 dollars)	28- 32	Current "Nine-Month" salary	"Nine-Month" salary at retirement	"Nine-Month" salary at termination

DATA REQUEST (cont'd.)

Description	Field	Active faculty	Retirements since the beginning of the 73-74 academic year to 12/31/78	All other departures or terminations since the beginning of the 73-74 academic year to 12/31/78
Record Type Code	33	1 = Active	2 = Retired	3 = Reported
9. Status (see instructions in cover letter)	34	1 = Full time 2 = Over 1/2 but less than full 3 = 1/2 time 4 = Less than 1/2	1 = Full time just prior to retirement 2 = Over 1/2 but less than full just prior to retirement 3 = 1/2 time just prior to retirement 4 = Less than 1/2 time just prior to retirement 5 = Considered retired but still teaching at institution in some capacity	1 = Death 2 = Disability 3 = Terminated (for any reason other than retirement, death, or disability)
10. Date of retirement, departure, or termination	35-38	Leave blank	MM/YY	MM/YY
11. Mandatory Retirement	39	Leave blank	1 = Yes 2 = No	Leave blank

A-9

TABLE 20

NORMAL RETIREMENT AGE BY INSTITUTION

65	66	68	70
Amherst	Harvard	Bryn Mawr	Duke
Barnard		Northwestern	U. Pennsylvania[3]
Brown		Princeton[2]	
Carleton[1]		Washington	
Columbia		Wesleyan	
Cornell		Yale	
Dartmouth			
Johns Hopkins			
MIT			
Mt. Holyoke			
Pomona			
Smith			
Stanford			
Swarthmore			
Trinity			
U. Chicago			
U. Rochester			
Vanderbilt			
Wellesley			
Williams			

---

[1]If tenured. Otherwise, NRA = 70.

[2]If tenured prior to '71-'72. NRA = 65 if tenured or hired after '71-'72.

[3]For faculty tenured prior to 10/15/59. NRA = 69 for faculty tenured after 10/15/59 and prior to 7/1/74. NRA = 65 for faculty tenured after 7/1/74. For all others, NRA = 70.

TABLE 21

MANDATORY RETIREMENT AGE BY INSTITUTION

None	65	68	70
Cornell	Brown	Bryn Mawr[2]	Amherst
Johns Hopkins	Dartmouth	Columbia	Barnard
Pomona	Mt. Holyoke	Harvard[6]	Carleton[4]
Stanford	U. Rochester	Northwestern	Duke
Trinity	Vanderbilt	Princeton[3]	MIT
U. Chicago		Washington	Smith
Wellesley			Swarthmore
Wesleyan			U. Pennsylvania[5]
			Yale[1]

[1] 70 if Connecticut state amendment passes.

[2] For tenured full professors. MRA = 65 for all others.

[3] If tenured prior to '71-'72. MRA = 65 otherwise.

[4] "MRA was 65 until law changes."

[5] For faculty tenured prior to 10/15/59. MRA = 69 for faculty tenured after 10/15/59 and prior to 7/1/74. MRA = 65 for faculty tenured after 7/1/74.

[6] 2 years full-time or 4 years part-time after NRA = 66.